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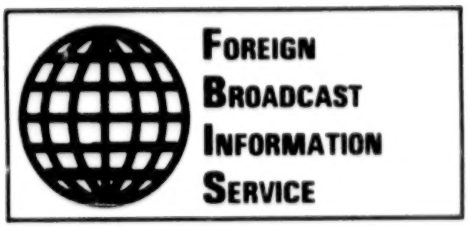

JPRS Report

Proliferation Issues

PROLIFERATION ISSUES

JPRS-TND-93-012 *4 May 1993*

CONTENTS

[This report contains foreign media information on issues related to worldwide proliferation and transfer activities in nuclear, chemical, and biological weapons, including delivery systems and the transfer of weapons-relevant technologies.]

CENTRAL EURASIA

RUSSIA

KAZAKHSTAN

KYRGYZSTAN

UKRAINE

WEST EUROPE

FRANCE

GERMANY

INTERNATIONAL

SOUTH AFRICA

Armscor Reveals 'Details' of Special Account

MB0105121993 Johannesburg SATURDAY STAR in English 1 May 93 p 2

[Report by Anita Allen: "Armscor Comes Clean"]

[Text] Armscor [Armaments Corporation of South Africa] has for the first time revealed details of the Special Defence Account (SDA) which this year was voted R[Rand]3.74 billion of the total defence budget of R9.3 billion.

In a special briefing an Armscor's spokesman gave SATURDAY STAR a breakdown of Armscor projects financed from the account.

This year's acquisition plan for various weapons systems and equipment is divided into two categories: major equipment projects and non-project-related equipment.

Included in the major equipment projects are fighter aircraft, helicopters, ship systems, ground force systems, and communications systems including early warning and radar.

These projects account for about R2.5 billion, or 70 percent, of the SDA and will all be handled by Armscor.

The more than 100 projects include both running and new contracts. Examples include the production of Cheetah aircraft, Rooikat armoured cars, G-6 artillery and Oliphant 1B tanks. The Rooivalk combat helicopter is no longer on the acquisition programme due to budget cuts.

The non-project-related equipment covers hundreds of items including parachutes, infantry weapons, ammunition, stores, spares, repairs and maintenance. These account for the remaining about R1.1 billion, or 30 percent, and most of the ordering will be handled directly by various units of the armed forces.

Of the major equipment projects, the air force will receive the lion's share—almost R2 billion, or 72 percent, of the total; the army around 20 percent; the navy about 7 percent; and about 1 percent will be spent on communications upgrading.

The R3.74 billion allocated by Parliament was deposited into the account, which was also credited with any money accruing from sales of surplus and obsolete equipment, such as the Harvard aircraft which were decommissioned last year.

The spokesman explained that the SDA operated like any bank account and was credited with any interest earned. The account was established and operated in accordance with the SDA Act of 1974. All expenditures had to be approved by the Minister of Defence, and auditing was done by the Auditor-General.

"Armscor is only involved in the acquisition of armaments and related products and services budgeted for in the SDA.

"We do not know whether the SDA is totally devoted to equipment and equipment-related acquisition. You would have to approach the SADF [South African Defense Force] for comment in this regard," the spokesman said.

He said it had been the policy during the Angolan war not to disclose any detail concerning the SDA because that would have been useful to the enemy.

"However, Armscor believes that it should now be transparent regarding the procurement of military equipment in peacetime. We have therefore embarked on a policy to disclose much more than in the past. The only hindrance at this stage is the arms embargo. Once this is lifted we would be able to be even more transparent."

He confirmed that SATURDAY STAR's request for more detail of the SDA was the first such request since the change in policy.

Approximately 40 percent (R1.7 billion) of the SADF's armaments is currently supplied by the Pretoria company Denel and at present the armaments industry is the largest exporter of manufactured goods in South Africa, averaging about R500 million over the past few years, of which R80 million went to African countries.

The spokesman confirmed that Armscor had in the past funded a missile development programme directed at acquiring the necessary technology, but the manufacture and acquisition of ballistic missiles had never been part of the programme.

The spokesman said the export policy was decided by the Cabinet. Special restrictions that applied were that end-user certificates had to be supplied, and no armaments were supplied that fell under the Nuclear Non-proliferation Treaty, the Biological and Chemical Weapons conventions, or the Missile Technology Control Regime embargoes.

Countries were divided in three groups: Group 1—no restrictions; Group 2—only certain support equipment; and Group 3—total prohibition.

He pointed out that the United Nations embargo on sales of arms to South Africa was mandatory. However, a resolution to boycott South African-manufactured arms was voluntary.

"We are not authorised to divulge which countries fall into these groups. As a rule, the group 3 countries are those on which the international community has imposed restrictions, for example Iraq and Yugoslavia, or countries that would pose a military threat to South Africa."

Nuclear Firms Participate in Windhoek Conference

MB2604090393 Johannesburg Radio South Africa Network in English 0500 GMT 26 Apr 93

[Text] Four South African companies will participate in an international conference of uranium producers, consumers, and nuclear fuel processors, in Windhoek this week. The conference, the fourth to be held in Africa by the London-based Uranium Institute, will deal with the latest developments in the nuclear industry. South African participants are the Atomic Energy Corporation, Eskom [Electricity Supply Commission], Vaal Reefs, and the Nuclear Fuel Corporation.

Weather Delays Denel Rocket Motor Test

MB2404142693 Johannesburg SATURDAY STAR in English 24 Apr 93 p 4

[From the "Briefly" column: "SA Rocket Test Delayed" by Anita Allen]

[Text] Cape Town—Unfavourable weather forced Denel's Somchem Division to postpone yesterday's test of a rocket motor at the Hangklip test site. The test forms part of the company's rocket launcher programme to boost a satellite of up to 500 kg into orbit around the earth. The test has been rescheduled for Monday.

Nuclear Technology Export Projects Viewed

HK2604033093 Beijing XINHUA Domestic Service in Chinese 1115 GMT 23 Apr 93

[By RENMIN RIBAO reporter Wen Hongyan (3306 4767 1750) and XINHUA reporter Zhuo Peirong (0587 1014 2837)]

[Text] Beijing, 23 Apr (XINHUA)—In recent years, China's Zhongyuan Foreign Engineering Company, affiliated with the China National Nuclear Corporation, has actively expanded foreign economic and technical cooperation, and this has promoted the export of project designing, equipment, materials, and labor, thus gaining substantial social and economic benefit. Through the company's efforts, China's atomic energy engineering technology has gone abroad and been spread in the world.

Since its founding in 1983, Zhongyuan has widely promoted its business connections in West Africa, North Africa, Southeast Asia, and North America; and has undertaken dozens of civilian and industrial project contracts with a total value of some $800 million. At present, it has completed projects worth $300 million and has earned over $100 million in foreign exchange.

The projects undertaken by the company won favorable comments in the countries concerned. The project in Algeria was regarded as an example of "South-South cooperation." In Jordan, the company undertook the contract of building more than 200,000 square meters of civilian housing and a national sports center. The high quality and the high speed won praises from the state leaders of Jordan. Chashma Nuclear Power Plant in Pakistan constructed by the company also won extensive praise.

Zhongyuan's work of exporting set equipment has also promoted the exportation of related equipment, materials, and labor services. In the past 10 years, the company has exported various equipment and materials worth a total of over $200 million. The materials and equipment exported to Algeria alone were carried by 17 ships, and the export of labor amounted to 4,000 people. This also brought along business in other areas with these countries. Without making any state investment, this company has developed into a first-class state-owned enterprise. It has set up subsidiaries in Africa and North America. There is a broader vista for its foreign economic cooperation in the future.

Nuclear Weapons Deployment in Tibet Denied

OW2904092593 Beijing XINHUA in English 0918 GMT 29 Apr 93

[Text] Beijing, April 29 (XINHUA)—Chinese Foreign Ministry spokesman Wu Jianmin described as "abject, sheer fabrication" a news report that China has deployed nuclear weapons in Tibet against India.

Wu made the remarks at a weekly news conference here this afternoon.

"We have never set up any nuclear research or production units in Tibet, nor we have deployed any nuclear weapons there," he said.

"To say that China has deployed nuclear weapons in Tibet against India is sheer fabrication. Such abject attempt to undermine the friendly relations between China and India is bound to end up in failure," he stated.

JAPAN

Nuclear Reprocessing Plant Construction Begins

SK2804070893 Seoul YONHAP in English 0656 GMT 28 Apr 93

[Text] Tokyo, April 28 (YONHAP)—Ground was broken for the world's largest nuclear fuel reprocessing plant on 380 hectares of land in Aomori prefecture on Wednesday.

The plant, to be owned and run by Japan Nuclear Fuel Co., will have the capacity to produce 5 tons of plutonium a year when it starts operation in 2000.

Japan is the only country without nuclear weapons to build such a large reprocessing plant. It already has a uranium enrichment plant and a storage site for low-level radioactive waste built last year at a cost of upwards of 1 trillion yen.

The new plant will be able to reprocess 80 tons of used nuclear fuel yearly, or 60 percent of Japan's total, and extract an estimated 5 tons of fissionable plutonium.

The company says it plans to use the extracted plutonium as fuel for a fast breeder reactor that is now under construction. And Japan is expected to build storage facilities for used nuclear fuel.

NORTH KOREA

Minister Denies Nodong Missiles Aimed at Japan

OW0305111193 Tokyo KYODO in English 1047 GMT 3 May 93

[Text] Kuala Lumpur, May 3 KYODO—North Korean Information Minister Kim Gi-ryong [name as received] said Monday [3 MAY] Pyongyang does not intend to use its new nuclear-capable, medium- range Nodong missile against Japan or other neighboring countries.

He also dismissed as propaganda a recent news report, quoting Japanese Defense Agency sources, that the missiles pose a threat because they have a range of 1,000 kilometers, capable of hitting western Japan. "This report is put out by Japan so that it can have an excuse to build nuclear bombs for defense," he said, adding this suspicion was reinforced by Japan's plan to import large amounts of reprocessed plutonium from western countries. "Japan is very advanced, so if it wants to make a nuclear bomb, it can. It's very dangerous especially with the plutonium," said Kim who is on a visit to Malaysia. He also said the missile report is a ploy to put more pressure on North Korea, which is widely suspected of having a nuclear weapons program despite Pyongyang's denial.

A Japanese daily, the YOMIURI SHIMBUN, reported Saturday [1 May] that North Korea is expected to complete development of the Nodong missile, based on the Soviet-designed Scud missile used in the 1991 Persian Gulf war, this year. The missile will be able to carry nuclear warheads as well as chemical and biological weapons, the daily said.

Reportage on Chemical Warfare Capability

Capability Analyzed

AU2704092793 Munich FOCUS in German 26 Apr 93 p 13

[Unattributed report: "North Korea Is Armed"]

[Text] After North Korea's withdrawal from the Nuclear Nonproliferation Treaty, Western governments are now also taking a close look at the no less dangerous chemical weapons potential of the communist dictatorship in the Far East. North Korea has "both the capability and the will" to wage war with chemical weapons, Federal Intelligence Service (BND) analyses say.

Not only South Korea is threatened. Scud missiles with a range of up to 800 kilometers could be used by North Korea as carriers of chemical agents. Pyongyang is pursuing its Scud missile program together with Iran, Syria, and Libya.

The stocks of the combat gases s-lost, sarin, "and perhaps tabun" are estimated at 300 tonnes. South Korea knows of "at least six" North Korean chemical weapons depots, which are distributed across the peninsula like a bar between Pyongyang and the demarcation line at the 38th parallel. Eight chemical factories are considered to be likely production sites, those in Sunchon, Hungnam, and Chongjin, among others. There are also indications of biological weapons, mostly viruses for epidemics, which are ready for use.

Pyongyang Denies Capability

SK2804112393 Pyongyang KCNA in English 1111 GMT 28 Apr 93

["DPRK Has No Chemical Weapon Plant"—KCNA headline]

[Text] Pyongyang, April 28 (KCNA)—There is no chemical weapon plant posing a threat to mankind in the Democratic People's Republic of Korea which has consistently pursued a peaceloving policy.

This is our clear answer to a false report of the German news weekly FOCUS.

According to a South Korean subsidized radio and KYONGHYANG SINMUN, the German news weekly on April 26, quoting "analytical data" of the German External Intelligence Agency, carried a fantastic report that "North Korea might unleash a war with chemical weapons" and that "there are eight chemical weapon plants in North Korea."

This is a totally unfounded false propaganda and a smear campaign against the DPRK.

The DPRK had clarified long ago that it would not engage in testing for the development of chemical weapons and their production, stockpile and introduction, and has made efforts to this end.

It is fact known to the world that the DPRK which sets store by international law and has complied with it in good faith has no chemical weapon.

It does not make sense that the DPRK with no chemical weapon plant and chemical weapons will start a "war" with "chemical weapons."

It is South Korea that must be listed when the chemical weapon plant and chemical weapons come into question.

It is an open secret that South Korea has some ten toxic gas plants and 25,000 boxes of chemical weapons.

While keeping mum about this fact, the German weekly fabricated a fiction and spread false rumours against the DPRK, obviously for a sinister purpose—a sinister ruse to mislead world public, isolate and stifle the DPRK and encourage the "pressure" campaign of the U.S. imperialists and reactionaries over nuclear problem.

Paid media of South Korea do not lag behind in false propaganda. It is shameless of the South Korean subsidized radio and KYONGHYANG SINMUN to relay the report of the German weekly while knowing it is false, with a view to doing harm to the DPRK.

The German weekly and the paid media of South Korea will get nothing from false propaganda. If any, it will be criticism and ridicule from the progressives.

IAEA Inspections Seen As Possibility

Pyongyang Expresses Intent

SK3004011593 Seoul YONHAP in English 0030 GMT 30 Apr 93

[Text] Berlin, April 29 (YONHAP)—The International Atomic Energy Agency (IAEA) is expected to soon partially resume its ad hoc inspection of North Korean nuclear facilities after a lapse of three months.

IAEA sources said Thursday that North Korea had expressed its intention to allow IAEA experts to visit Pyongyang following active consultations between the IAEA and North Korea through letters and personal contacts recently.

The two sides were currently discussing the date of the visit, the problem of obtaining North Korean visas and other matters, they said. The visit may take place as early as early next week, they added.

Hans Meyer, the IAEA spokesman, said the date for the visit had not been set but he indicated a visit by an IAEA team was imminent by saying the IAEA officials had not yet received visas from North Korea.

The North Korean Embassy in Vienna also confirmed that the two sides were negotiating on the list of visitors. They will be able to visit North Korea in a few days, it said.

IAEA sources said North Korea has shown difficulties with any IAEA visit before May 1, because it is North Korea's Labor Day and an important holiday.

Meanwhile, the specific purpose of the planned visit was not known but informed sources said the IAEA team's activities would likely be limited to checking functions of "the cameras and other inspection equipment" installed in the North Korean nuclear facilities and changing films.

One IAEA expert said the IAEA has to check inspection cameras and other equipment every three months.

The IAEA spokesman denied as inaccurate press reports that North Korea has formally asked the IAEA to observe the changing of nuclear fuel at a 5 megawatt reactor in Yongbyon, North of Pyongyang.

North Korea is reportedly planning to send a delegation to the IAEA for talks on formal resumption of ad hoc inspections of its nuclear facilities.

But IAEA officials explained that even if ad hoc inspections formally resume, it does not mean the North Korean nuclear issue found a decisive turning point for a resolution.

The IAEA spokesman also said there had not been any progress in the IAEA's efforts to hold special inspections on two nuclear facilities suspected of being nuclear reprocessing plants. North Korea has been refusing to allow special inspections of the two facilities, claiming they are just military installations.

An official at the North Korean Embassy acknowledged that the IAEA was continuing to ask for special inspections on these facilities, but said that North Korea "will never allow them."

Conditions Set for Rejoining NPT

OW0305105993 Tokyo KYODO in English 1022 GMT 3 May 93

[Text] Kuala Lumpur, May 3 KYODO—A North Korean Government official Monday [3 May] named four conditions that must be met if it is to rejoin the Nuclear Non-Proliferation Treaty [NPT].

Information Minister Kim Gi-ryong, [name as received] on a visit to Malaysia, said Pyongyang wants a neutrel International Atomic Energy Agency (IAEA) and assurances that its military sites will remain closed to foreign checks.

The minister also said his country wants the United States to guarantee it will not use nuclear force against North Korea and that the U.S. withdraw any nuclear weapons and facilities it may have in South Korea.

"If these conditions are met, we may rejoin the treaty," he told reporters, adding North Korea has no wish or potential to make nuclear weapons.

North Korea announced it was leaving the pact in mid-March to avoid IAEA inspection of two nuclear sites in Yongbyon suspected of being used to produce nuclear weapons.

Kim also said North Korea will meet the U.S. for talks aimed at defusing tension caused by its pullout, provided the U.S. also meets these conditions and stops bullying small nations to do its bidding.

The U.S. was reported last week to be interested in opening high-level talks with North Korea to negotiate on Pyongyang's withdrawal and resolving the crisis.

North Korea's withdrawal from the treaty strengthened international suspicions that despite Pyongyang's denials, it has a nuclear weapons program. The pullout takes effect from June 12.

Kim said North Korea will allow IAEA inspection of a nuclear power plant in Yongbyon but not at a nearby military base which is exempt from such checks under the treaty.

"We can't allow the military facilities to be opened up to the IAEA, the U.S. or anyone else because it's a matter of our sovereignty," he said.

Kim also accused the IAEA of being a tool of the U.S., instead of remaining neutral, because it acted against Pyongyang based on satellite photographs and information given by the U.S.

"The U.S. must change its stand of trying to use its might to force countries, especially third world nations like us, to do what it wants," he said.

The U.S., he added, should stop using "double standards" in insisting North Korea open its nuclear facilities while ignoring those of Israel and South Africa, both widely believed capable of making nuclear bombs, he said.

Yongbyon Development 'Fictitious'

SK3004044293 Pyongyang KCNA in English 0434 GMT 30 Apr 93

["Foul Intention To Stifle Socialism"—KCNA headline]

[Text] Pyongyang, April 30 (KCNA)—The United States and its followers are getting more hectic in spreading the rumour about the fictitious "development of nuclear weapons" by the DPRK.

Quoting a preposterous report of WASHINGTON POST, South Korean Christian Broadcasting System (CBS) Wednesday let out the hokum that a "new large-size atomic reactor under construction" in Yongbyon in the North "is in the finishing stage" and "nuclear bombs could be manufactured" there.

The rumour about DPRK's "development of nuclear weapons" set afloat by the U.S. imperialists is an utterly groundless propaganda and it is a vicious intrigue against the DPRK.

To make the rumor sound real, the U.S. imperialists even argued that "concealment of North Korea's nuclear development" had been exposed by "satellite pictures." But those photographs are forgeries of the U.S. CIA.

Consistently advocating the denuclearization of the Korean peninsula, the DPRK declared more than once that it had neither intention nor capability to develop nuclear weapons and it has no facilities for developing nuclear weapons to be concealed.

Having deployed a large number of nuclear weapons in South Korea, the U.S. imperialists are raising quite a row over the fictitious "development of nuclear weapons" by the DPRK. This only reveals their intention to stifle Korean-style socialism centered on the popular masses. This is an anachronistic dream.

SOUTH KOREA

Seoul To Provide DPRK With Atomic Technology

SK2304061193 Seoul CHOSON ILBO in Korean 23 Apr 93 p 2

[By reporter An Hui-chang]

[Text] The government revealed on 22 April that it has decided to provide North Korea with funds and technology that will enable North Korea's nuclear power plant in Yongbyon to fully function as a power plant. This decision was made as a measure to remove suspicions over North Korea's nuclear weapon development. It will discuss this issue with concerned countries like the United States and Japan.

The government is now mapping out concrete measures such as the replacement of the non-economical and dangerous graphite-moderating carbonic acid gas cooling-type atomic reactors at Yongbyon's nuclear power plant with light-water reactors.

Ever since its completion in 1986, the 5-MW test atomic power plant in Yongbyon has remained devoid of power-transmission lines or other necessary equipment. In September 1992, it was hurriedly equipped with electric poles and other installations prior to the IAEA's third inspection of North Korea. In view of this fact, Western countries including the United States regard it not as a normal power plant but as facilities which produce

plutonium for nuclear weapon development, and are demanding inspections of it.

The government believes that placing the Yongbyon atomic power plant facilities under the international society's control on the one hand, and augmenting [poganghada] them on the other is an effective method for completely removing suspicions about North Korea's nuclear weapon development. Furthermore, in determining this policy, the government seems to have taken into consideration North Korean Vice Premier Kim Tal-hyon's request for the South's support of the North's facilities, which he made during his visit to Seoul in July 1992.

A high-ranking government official said, "Should North Korea achieve the satisfactory results of having the United States agree in negotiations with North Korea to suspend the Team Spirit exercise and to not use nuclear weapons against North Korea, North Korea will have no reason to oppose this policy." He then added that "the government is also considering organizing an international consortium composed of nuclear-related enterprises and is discussing this with the United States and Japan."

Seoul Delays Talks Until U.S.-DPRK Meeting

SK2504022493 Seoul YONHAP in English 0215 GMT 25 Apr 93

[Text] Seoul, April 25 (YONHAP)—The South Korean Government will not accept any North Korean proposal of an inter-Korean dialogue before the high-level U.S.-North Korea meeting and a clear position of the communist country afterward, a government official said Sunday.

Seoul decided to stay aloof from Pyongyang for the present lest it should make use of the diverse negotiating chances with the United States, South Korea, and International Atomic Energy Agency (IAEA) to confuse the international tie-up to stop its nuclear development, he said, requesting anonymity.

Even if inter-Korean talks took place, any progress in the nuclear issue could not be expected at present stage, the official said, adding that the current Seoul's position was to wait for the results of a Washington-Pyongyang vice-ministerial meeting.

North Korea's proposal of an inter-Korean talks could be understood as a move to weaken cooperation between the Seoul government and the international community to prompt the hardline country back to the nuclear non-proliferation treaty and comply with IAEA's special nuclear inspections, he said.

The government decided that it was best to strengthen ties with its allies and fully support United Nations Security Council action to pressure Pyongyang into returning to the global nuclear safeguards and coming clean of nuclear suspicion.

But even the U.S.-North Korea high-level meeting ends without a tangible outcome, there was a possibility of an inter-Korean talks in the future based on the attitude of Pyongyang appeared during its meeting with Washington, the official said.

NEW ZEALAND

Premier Opposes Resumption of French Tests

BK0105080293 Hong Kong AFP in English 0655 GMT 1 May 93

[Text] Auckland, May 1 (AFP)—New Zealand Prime Minister Jim Bolger said Saturday he would be "very disappointed" if France resumed nuclear testing in the South Pacific.

He was commenting on a statement by the head of France's Atomic Energy Commission Philippe Rouvillois urging the French Government to end its year-long moratorium on nuclear weapons testing.

Bolger said in a speech at a conference of the Auckland division of the ruling National Party there was "absolutely no need" for the tests at this time of international disarmament.

Earlier Saturday Foreign Minister and Deputy Prime Minister Don McKinnon said New Zealand had no indication France was thinking of resuming nuclear tests, despite comments from Rouvillois, who told the French National Assembly's defence committee this week nuclear tests were "indispensable for confirming our ideas and calculations."

McKinnon, speaking in an interview with the New Zealand Press Association, said: "We always expected to hear this information from that particular individual.

"This particular agency of the French Government has always been supportive of continued testing."

McKinnon said New Zealand was "delighted" that French President Francois Mitterrand did not want to see testing start again.

"We hope it stays that way. We have seen no evidence that tests are about to be resumed.

"But coming from the head of the agency that is responsible for the whole exercise, one can understand his point of view, even though we totally disagree."

The agency's view had always been "somewhat provocative," McKinnon said.

New Zealand had not yet contacted the French Government "but we will certainly be making our views known," he said.

TAIWAN

President Stresses Need for Advanced Weapons

OW2804104393 Taipei China Broadcasting Corporation News Network in Mandarin 2300 GMT 27 Apr 93

[From the "Hookup" program]

[Text] President Li Teng-hui on 27 April pointed out that, in order to protect the safety of the country and stability in the Taiwan Strait and guarantee the lifestyle of freedom and democracy of the 20 million compatriots in Taiwan, the Government of the Republic of China [ROC] must purchase advanced weapons and build up its air, naval, and ground forces to maintain an effective deterrent.

President Li emphatically pointed out that it is our belief that only effective power can ensure safety and only safety can ensure prosperity.

President Li pointed out: Judging from the strategic situation of the world, although the cold war has ended, there are still different viewpoints between the two sides of the Taiwan Strait because of the different ways of life on the two sides of the strait. Our side has long taken the initiative to declare the end of the Period of Suppression Against the Communist Rebellion and has given up the use of force as means to solve disputes. We have also expressed our desire to compete with the mainland in a peaceful manner in accordance with the principles of and a course for a program for national reunification. However, the Chinese Communist side still has not ruled out the use of force and is attempting to achieve its goal of swallow up Taiwan, Penghu, Chinmen, and Matzu.

BULGARIA

Kinteks Chief Denies Arms Exports Allegation

AU2604173593 Sofia BTA in English 1430 GMT 26 Apr 93

[Text] Sofia, April 26 (BTA)—Mr. Anton Saldzhiyski, chief of the Bulgarian Kinteks Arms Company, refuted today the accusations in the U.S. FORBES magazine that the company headed by him exported weapons to countries under embargo.

"My conscience is more than clear and I do not see why I should worry, nor why this should worry our company and all the more so Bulgaria because this article is aimed against Bulgaria as a whole," 38-year-old Saldzhiyski said in an interview for the National Radio in connection with the article in the May issue of FORBES International.

An article in FORBES International signed by Peter Fuhrman claims that Bulgaria is the centre of illegal traffic of ex-Soviet weapons and that Kinteks was the key to this dirty traffic. According to FORBES, in 1992 this Bulgarian arms company made a profit of $100 million from arms deals with Iraq, Libya and Yugoslavia.

Today Anton Saldzhiyski stated categorically that the Bulgarian Government and all companies licensed to trade in weapons have been strictly observing the embargo against these three countries. According to Saldzhiyski, "as a whole" the facts revealed by the FORBES magazine do not correspond to the truth. After acquainting himself with the original of Peter Fuhrman's article, Kinteks would refute it in a press release.

Today's OTECHESTVEN VESTNIK and DEMOKRATSIYA inform in detail of the article in FORBES International, OTECHESTVEN VESTNIK carrying its unabridged reproduction.

Yesterday the Kinteks chief told 24 CHASA that with his article Peter Fuhrman was probably fulfilling someone's commission. "Bulgaria's arms exports have fallen to an incredibly low level and someone wishes to destroy them completely," Mr. Anton Saldzhiyski said.

POLAND

25 Kilos of Cesium-137 Isotope Discovered

LD3004170993 Warsaw PAP in English 1624 GMT 30 Apr 93

[Text] Gdansk, April 30—The Gdansk branch of the State Protection Office (UOP) on Thursday discovered 25 kilos of radioactive cesium 137 isotope in Braniewo (Elblag Province), announced the branch press spokesperson Andrzej Swierczynski on Friday.

The cesium stash was found in a ceramic container marked with Cyrillic writing buried at a distance of five kilometers from the Russian border.

The Gdansk UOP suspects that the cesium comes from one of the republics of the former USSR, and that Gdansk residents may be involved in the matter.

The Interior Ministry recorded 100 attempts at smuggling radio- active materials in 1992, while in 1991 there were only 30.

SLOVAKIA

Spread of Trade in Nuclear Materials Noted

93CH0529Z Bratislava PRAVDA in Slovak 25 Mar 93 p 3

[Excerpts from an interview with Lieutenant Colonel Kamil Klastersky of the Central Office of the Criminal Police in Prague by Alena Ruzkova; place and date not given: "Trade in Nuclear Materials by 'Clean' People"]

[Text] The illegal transport of radioactive materials is a new kind of crime that is going into full operation in Europe. Czecho-Slovakia previously, and now both the Czech Republic and the Slovak Republic, have become suitable pipeline countries for the transportation of various strategic materials. Lieutenant Colonel Kamil Klastersky of the Central Criminal Police of the Czech Republic talked with us in more detail about this. Every European country should have its own police office to deal with this problem, and Lt. Col. Klastersky runs just such a central office in Prague.

"It would be desirable if the parliaments in this European region suppressed the crime connected with nuclear materials in approximately the same way. Just as it is the rule that we drive on the right side of the road and that the car have two headlights and such, I think these crimes should be punished in the same way in all of the states, as terrorism and the sale of drugs are," he added.

For what and for whom is this dangerous item of trade designated, and, finally, who is, after all, willing to risk his health for it? Citizens of the former federation, both Czechs and Slovaks, have entered into this business. Language plays one of the most important roles in it because the radioactive material comes from the territory of the former Soviet Union. The police have come up with an interesting piece of information—that, so far, in every case, it has involved people with "clean" criminal records. And that is a new trend.

"When we look at the group of three people from Bratislava—we cooperated with Vienna in its investigation—one of them was an engineer and the other two were doctors, who knew their way around in nuclear physics," said Klastersky.

The smugglers, who are only a small part of the network of those buying and selling, actually do not know what they are carrying. It has happened that some of them have received doses of radiation while transporting the materials.

This contraband is acquired only by someone who has a lot of money and lives in a country into which the importation of radioactive material is not allowed. He is therefore ready to give whatever to whomever for it. "In a word, the new-age north against the south. The Czech lands and Slovakia are 'for now only' countries of transit," concluded Klastersky.

ARGENTINA

President Dedicates Heavy-Water Industrial Plant

PY2104163793 Buenos Aires TELAM in Spanish 2100 GMT 20 Apr 93

[Text] Arroyito, Neuquen, 20 April (TELAM)—During the ceremony in which he dedicated a heavy-water industrial plant, President Carlos Menem today underwrote his administration's economic policy and endorsed the peaceful use of atomic energy.

Menem underscored "the stability" of Argentina's economy, which was achieved thanks to the convertibility plan, and stated that the privatization plan has brought about "a historic change in the Argentine Republic" that has been instrumental in "making our country prosper." He said that with the proceeds from the privatizations undertaken by the executive branch, "we are paying the government's domestically contracted debt—especially what we have with pensioners; we have settled our external debt with the IMF and joined the Brady Plan."

Menem added that, now that an agreement has been signed with the committee of creditor banks, "we have a 30-year deadline to pay our debts."

Menem asserted that Argentina currently is acknowledged to be "a country that is on the leading edge of nuclear technology," adding that atomic energy "will be used for peaceful, not military, purposes."

Menem made these remarks during the inauguration of the heavy-water industrial plant in Arroyito, located 50 km southwest of Neuquen city.

Neuquen Province Governor Jorge Sobisch, Deputy Governor Felipe Sapag, and Manuel Mondino, chairman of the National Commission for Atomic Energy, were present at the ceremony.

During his speech, Menem said that once the construction of the Atucha-2 nuclear power plant is completed, "there will be 2,000 new openings." He pointed out that the Arroyito plant will enable the country to obtain yearly returns amounting to $60 million.

At one point during his speech Menem paid tribute to General Juan Peron, whom Menem defined as "my politics master." He pointed out that "if today we have developed nuclear technology in Argentina, we owe it to Peron, for he laid the keystone."

Menem recalled that 35 years ago, Argentina ranked 10th among the world's leading economies and that "owing to clashes and mistakes, we were demoted to No. 75." He asserted that "we now are regaining lost ground."

He noted that, in order to do so, one must keep on working "without turning our thoughts to the upcoming elections, but rather thinking about future generations," because "it is time we left aside partisan standards to opt for the Argentine one."

Having finished his address, Menem went to the plant's controls, where he symbolically launched the plant's operations.

Once the official ceremony was over, Menem left for San Carlos de Bariloche to attend the opening ceremony of an international conference on drug abuse.

The head of state arrived at Arroyito after holding working meetings with Sobisch and his cabinet members in Neuquen city, where he also dedicated a new central market for vegetables.

During a news conference he gave about noon, Menem announced that this year the government will invite firms to tender bids for the construction of a bridge between the cities of Neuquen and Cipolletti, located in Rio Negro Province.

BOLIVIA

High Officials Reportedly Involved in Arms Deals

PY2304170193 La Paz PRESENCIA in Spanish 16 Apr 93 p 7

[Text] Spokesmen of the High Command of the Armed Forces have stated that high-ranking military officers and government officials are believed to be involved in the enormous international trading of weapons in which the name of the Armed Forces has been used.

The sources explained that there are a considerable number of documents and names of high-ranking personalities involved in the controversial case that was denounced on 14 April by the Information Ministry. Armed Forces Commander in Chief General Oscar Vargas Lorenzetti has limited himself to saying that an investigation has begun.

The military sources stated: "The incident was discovered by accident some time ago. It has subsequently been confirmed by the intelligence services of the Armed Forces. It involves international arms trafficking in which the name of the Armed Forces has been used to benefit some criminals." The sources added: "A large number of government personalities and high-ranking military officers appear in documents pertaining to arms deals. It has not been established if these persons participated in the deals, because their names, and those of the military officers, could have been used by the arms ring."

The sources stressed that an investigation has started to determine [unfinished sentence as published] Vargas Lorenzetti declined to give details about the arms trafficking, simply stating that a defamation of the Armed Forces will not be tolerated and announcing severe punishments for those who are guilty of this irregularity. "This incident," the top military leader said, "is under

investigation, and we have ordered a careful evaluation of everything pertaining to this crime. We will not allow the name of the Armed Forces to be used in incidents of this type. When we find them, the culprits will be punished in accordance with the law."

Through an Information Ministry communique, the government denounced that a well-organized international network was trafficking weapons using the names of Bolivia and the Armed Forces as the alleged destination of the weapons.

The document stresses that the government has at no time authorized the use of the name Republic of Bolivia for these transactions. It announced that the case will be in the hands of the attorney general's office to look after the legal aspects and of the Foreign Affairs Ministry to look after the international aspects.

Pointing out that "we are facing something really big," the sources interviewed by this newspaper explained that the first investigations carried out inside and outside the country reveal that the arms traffickers purchased their "merchandise" in Australia and sold it to Yugoslavia. "The case is fairly big. Our first steps in the investigation led us to Australia, where the weapons were purchased and where everything seems legal with the false papers of the Armed Forces and then to the lamentable civil war in Yugoslavia, as the place where the weapons are sold," the sources said. They stressed that nothing has yet been confirmed officially. While the investigation has advanced in some aspects, in others it has not advanced very much.

They also indicated that a German citizen is presumably the head of the international ring that has plagiarized the name of Bolivia and of its Armed Forces to carry out the "multi-million dollar deal."

BRAZIL

Russia's Kozyrev To Sign Nuclear Accords

PY2704001993 Sao Paulo O ESTADO DE SAO PAULO in Portuguese 25 Apr 93 p 9

[Report by William Waack]

[Excerpt] Moscow—Russian Foreign Minister Andrey Kozyrev will be visiting Brazil at the beginning of May to sign a series of agreements. Among them is a Brazilian-Russian cooperation agreement for the peaceful use of nuclear energy. Kozyrev will also be visiting Chile and Argentina as part of a tour, which Russian diplomats regard as an important turn toward Latin America.

In a recent talk with Russian journalists during a trip to the East, Kozyrev granted great importance to his trip to Brazil, which has been postponed twice this year because of Russian domestic developments.

Russian President Boris Yeltsin has also been invited to visit Brazil, and it is still possible that he will make this trip before the second half of the year. Brazil is one of the main countries with which the Russian Government has chosen to diversify its trade, economic, political, and diplomatic ties.

The Russian foreign economic relations minister was recently in Brazil to continue negotiations started last year. These negotiations also encompass the transfer of Russian state-of-the-art technology in the military and short-range missiles area. [passage omitted]

Nuclear Plant Privatization Debated

PY2204132993 Sao Paulo FOLHA DE SAO PAULO in Portuguese 19 Apr 93 p 5

[From the Belo Horizonte bureau]

[Text] Mines and Energy Minister Paulino Cicero stated in Belo Horizonte that the privatization of the Angra I nuclear plant and of Petrobras [Brazilian Petroleum Corporation] "is completely out of the question." "Angra I due to security reasons and the exclusive attributions of federal public power [sentence as published]. And only by altering the constitution can Petrobras be meddled with."

The suggestion to privatize these two state companies, the Vale do Rio Doce Company (CVRD), and Furnas [Furnas Electric Power Plants], was made by the Finance Ministry. "I view this news as an expression of intent made by the Finance Ministry's technicians, who, due to their concern over the public deficit, are trying to find a way to recompose the country's finances."

The minister stated that, before thinking about privatizing, the government could make money by selling shares of some enterprises on the stock market. Cicero believes that "there is nothing wrong" in increasing the placing of the shares of CVRD and its subsidiaries on the stock market.

"It is a very good mechanism that will allow the government to rid itself of the control of some enterprises. In the first place, because it will not have to make evaluations every minute that will always be objected to, and in the second place because the stock market does not receive rotten money."

Cicero believes that Furnas should also open up its capital. "But great care must be taken, because it is not the ideal formula to resolve the government's cash flow. Finance Ministry technicians believe that with the sale of Furnas shares they will be able to improve the Treasury's situation. But they forget that Eletrobras [Brazilian Electric Power Company], which has shares on the market, controls Furnas."

"Therefore, the income from the shares of its subsidiary will belong to the shareholders of Petrobras. This is why the money that is obtained must be used in expansion programs within the country's electricity system, and not

to balance accounts or to clear the public debt." Cicero stated that the government has not yet made a decision.

CHILE

Pinochet Meets Defense Minister in Beijing

HK2304143093 Beijing XINHUA Hong Kong Service in Chinese 1235 GMT 23 Apr 93

[Text] Beijing, 23 Apr (Beijing)—General Chi Haotian, defense minister and state councillor, received the visiting commander of the Chilean Army, General Pinochet, and his party at the Great Hall of the People this afternoon. The two parties exchanged views on developing friendly relations between the armies of the two countries.

The Chilean guests arrived in China on 21 April to visit at the invitation of the General Staff Headquarters of the Chinese People's Liberation Army. Xu Huizi, deputy chief of general staff, held a welcoming ceremony for General Pinochet and held talks with him on 22 April.

During their stay in Beijing, General Pinochet and his party will visit army units and factories. They will later visit Xian and Guangzhou.

EGYPT

Musa Endorses Disarmament Initiatives

NC2204155693 Cairo AL-JUMHURIYAH in Arabic 19 Apr 93 p 6

[Report by 'Ali al-Safti]

[Text] Foreign Minister 'Amr Musa has stated Egypt's interest in translating constructive disarmament initiatives into practical measures based on the following four rules: Consolidating the security of the region's countries by establishing relations of peace and dialogue and keeping political arrangements free from the logic of power; maintaining equality in the quality and quantity of the military capabilities of the region's states; adopting arms control and disarmament agreements applicable to all regional countries on weapons of mass destruction, particularly nuclear, chemical, and biological weapons; and reducing conventional weapons once regional peace is established.

In a speech read on his behalf by Ambassador 'Abd-al-Rahman Mar'i at the start of the Conference for Security, Arms Control, and Disarmament in the Middle East, Musa said disarmament agreements must apply to every country, which could be achieved by endorsing the arrangements outlined by the world community according to each country's security needs. He said Egypt has a remarkable history of support for regional disarmament efforts. Egypt's constructive initiatives prove this, the latest one coming from President Mubarak on 9 April 1992 to free the Middle East of all weapons of mass destruction.

INDIA

Editorial on U.S. Nuclear Stand

93WP0112B Bombay NAVBHARAT TIMES in Hindi 1 Mar 93 p 4

[Editorial: "India, Nuclear Nonproliferation, and the United States"]

[Text] Suddenly, it seems that Clinton's United States is concerned about outlining plans for two foreign policy issues, and both of these are directly related to India. The senior generals in the U.S. military have begun to realize that some Third World countries have built powerful missiles that can target the United States. Therefore, they are programming their computers to drop nuclear weapons on Third World countries if the need arises. These plans are aimed at the republics that were once part of the once-powerful Soviet Union. These republics have become autonomous nations and have inherited stockpiles of missiles. Ukraine also has nuclear weapons. India is not directly included in this list. However, the harsh way the U.S. intelligence agency, the CIA, has criticized Russia for supplying India with the cryogenic engine discourages forming any positive opinion about the U.S. attitude toward India.

This was hinted by the U.S. generals. At the same time, CIA Director R. James [Woolsey] has expressed the possibility of the use of nuclear weapons if there were a war between India and Pakistan. The basis of James' [as published] fear is both countries' involvement in nuclear programs for many years, and the fact that they may have either already made nuclear weapons or have the ability to do so should the need arise. James is sad because, if this happens, both New Delhi and Islamabad can be targets of nuclear bombs, and millions of people would suffer unimaginable miseries. In U.S. circles, they are considering it fortunate that these talks are limited to the generals and intelligence agencies and that the government has not made any policy decision about it. However, those who know the influence of the Pentagon in determining U.S. foreign policy will understand the importance of these discussions. As a footnote, one should know that CIA Director R. James is one of Clinton's favorites. The new President is focusing his whole energies to energize the U.S. economy. This is proved by the fact that four days ago Clinton presented his six-point economic policy in a speech given at American University. However, the U.S. economy is not like the economies of Canada and Brazil so that the President should worry and work so hard to improve it, gambling his nation's world prominence. Only last week, Clinton showed his country's future clout by airdropping aid in Bosnia. Neither Great Britain, the closest U.S. ally, nor NATO was willing to help the United States in this effort. All gave their verbal approval and are avoiding direct participation. The air relief plan could aggravate the civil war situation in Bosnia and this could affect U.S. interests. However, despite all these problems, Clinton made the decision, got UN approval, and the Serbs promised not to interfere in this effort. In other words, no one should be mistaken that there would be a change in U.S. foreign policy after Clinton's arrival. This policy of making the U.S. presence felt around the world was started by Reagan, and Bush started the Iraq war as part of this effort. Therefore, R. James' statement is more important than the U.S. military generals' opinion. In a single statement, they let out this message: The United States will treat India and Pakistan equally in the area of nuclear development if not in other areas (if both countries still do not learn, they will be made nuclear targets with the help of computers).

Recently, John Major, Boris Yeltsin, and Helmut Kohl visited India. All of them made the trip for their own countries' economic interests. All of them wanted India to sign the Nuclear Nonproliferation Treaty which it has been declaring unacceptable. The important thing is that none of them pressured India about it or made it a prerequisite of economic cooperation. At one time the Bush administration went so far as to require that we sign this treaty to receive economic aid. Clinton has not hinted at such a step. The environmental and human rights issues are considered important in this context. R.

James is forgetting history and calling for India and Pakistan to be equal. We are afraid that tomorrow the Clinton administration may require India to sign the Nuclear Nonproliferation Treaty. It is sad to say that R. James has forgotten that India's nuclear program is for peaceful uses. Zulfiqar Ali Bhutto, on the contrary, announced the plan to make the Islamic bomb in the 70's and hinted that Pakistan's nuclear program was for warfare, and Pakistan has never denied this.

New Delhi Urges International NPT Dialogue

BK2104114293 Delhi All India Radio Network in English 0830 GMT 21 Apr 93

[Text] India has called for an international dialogue to review the Nuclear Nonproliferation Treaty, NPT, to make it an instrument for achieving the complete elimination of nuclear weapons. The Indian ambassador, Mr. Satish Chandra, told the United Nations Commission on Disarmament that New Delhi does not believe that partial and unjust measures or punitive action on a selective basis will achieve the desired results. He said [word indistinct] groups and regimes created to impose unilateral restrictions on trade in technology, equipment, and material on a discriminatory basis will not prevent nuclear proliferation. Mr. Chandra emphasized that nonnuclear weapon states scrupulously adhere to a policy of nonproliferation despite acquiring a nuclear technology capability, and refrain from assisting any other state. But there was free and frantic competition amongst nuclear weapon states in acquiring nuclear [word indistinct] capacity, he said.

Sensors Developed for Fast-Breeder Reactors

93WP0127A Madras THE HINDU in English 3 Mar 93 p 17

[Article by Gopal Raj in Thiruvananthapuram: "Sensors for Fast Breeder Reactors"]

[Text] The Indira Gandhi Centre for Atomic Research (IGCAR) at Kalpakkam has developed several relatively cheap and highly sensitive electrochemical sensors to continuously monitor the purity of liquid sodium used as coolant in the fast breeder reactors.

Liquid sodium is one of the critical technologies involved in fast breeder reactors. With a boiling point of 882°C, liquid sodium remains highly subcooled even at reactor temperatures of 530°C. Consequently, the liquid sodium based primary cooling circuit can operate at near atmospheric pressure, while high pressure is required in conventional reactors to maintain the coolant water at temperatures of around 260°C. Being a metal, liquid sodium has much better thermal conductivity than water and can extract heat more efficiently.

Its high reactivity has, however, raised concerns of safety. Sodium at above 200°C readily burns in air. More important, sodium reacts violently with water to produce hydrogen, with considerable potential for a dangerous explosion.

Liquid sodium was a very benign substance when it was pure, observes Dr. C.K. Mathews, Director of the Chemical Group at IGCAR, Kalpakkam. Corrosion of stainless steel (used to make the reactor container and piping) was, for instance, far less than if water were to be used. It is therefore of prime importance that the purity of the liquid sodium be monitored continuously.

In view of the reactivity of sodium with water, fast breeder reactors have two sodium loops to prevent the escape of radioactive material even if there is a leak in the steam generator. The primary loop (containing radioactive sodium) transfers the heat from the reactor core to the secondary loop with nonradioactive liquid sodium. It is sodium from this secondary loop which goes into the steam generator to produce steam which drives the turbines.

Although care was taken during design and construction to avoid any defects in the steam generators it is still necessary to detect even the tiniest of leaks during operation so that corrective action could be taken before they grew any larger and poses a serious hazard. Pipes carry water under high pressure through the hot sodium in the steam generator. Even the smallest leak would allow tiny quantities of water enter the liquid sodium and product hydrogen. A sensitive hydrogen detector would therefore give the first warning sign of such a leak.

In liquid sodium cooled reactors in the world, hydrogen detection has been effected by passing a small quantity of liquid sodium from the steam generators through a thin metal tube at low pressure so that the hydrogen in solution (as sodium hydride) bubbles off as gaseous hydrogen. The hydrogen is detected using a mass spectrometer.

The IGCAR has developed a low-cost electrochemical sensor to detect hydrogen in liquid sodium even in concentrations as low as one part per billion, said Dr. Mathews at the recent annual meeting of the Materials Research Society of India in Thiruvananthapuram. The mass spectrometer also has an accuracy of a few parts per billion. Since the new sensor is dipped into the stream of liquid sodium, it could give continuous on-line indication. These sensors would cost at most a few thousand rupees compared to several lakhs for the mass spectrometer method.

A carbon sensor had also been developed at IGCAR, said Dr. Mathews. Although other groups elsewhere in the world had tried, they had been unsuccessful. The IGCAR carbon sensor had been tested at the Karlsruhe Nuclear Center in Germany for more than a year and found reliable, according to him.

Carbon levels in liquid sodium was generally very low. But liquid sodium could remove carbon from stainless steel at high temperature and deposit it elsewhere at

lower temperatures. Such decarborisation and carborisation would affect the strength of the steel over a long period of time. The carbon sensor would make it possible to monitor and study the process continuously.

Another inexpensive electrochemical sensor to monitor oxygen levels in liquid sodium had been devised. It was necessary to maintain oxygen concentration around 10 parts per million. While pure liquid sodium was noncorrosive, concentrations of oxygen of more than 20 parts per million could lead to noticeable corrosion. At the same time, if oxygen levels in liquid sodium were too low, the chromium oxide coating of stainless steel parts would be lost and components in close contact could become self-welded, he pointed out. "We have got a good grip on sodium technology," observed Dr. Mathews.

Test Confirms Safety of Indigenous Reactor

93WP0125A Bombay THE TIMES OF INDIA in English 9 Mar 93 p 18

[Article: "Test Confirms Safety of Indian N-Reactor"]

[Text] New Delhi, March 8 (PTI). Indian nuclear scientists say that an important test they conducted at the Narora atomic power station some time ago has removed any doubt about "core melt down" even if the coolant pumps failed.

Called "thermosyphon test," the experiment was conducted in one of the two reactors at Narora by deliberately switching off the pumps circulating the coolant through the reactor core.

The test was said to be a success and it confirmed the safety of the Indian reactor systems even in the unlikely event of failure of primary coolant pumps.

Loss of coolant accident, or loca in nuclear parlance, is the worst that can happen to a reactor in operation. Even though the reactor automatically shuts down, the heat that continues to be generated due to decay of fission products—unless removed—could lead to melting of the core.

Mr P. K. Vijayan and his colleagues at the reactor safety division of the Bhabha Atomic Research Centre (BARC) in Bombay said the Narora-type reactors will be safe even after loca due to "thermosyphon cooling," an inherent feature of the Indian design.

In the Narora design, the reactor core is located 23 metres below the steam generators where the nuclear heat, transported by the coolant, is converted into steam to run the electricity-producing turbines.

In the event of pump failure, forced circulation of coolant comes to a stop, but the height difference between the core and steam generators and resulting density gradient enables the coolant to circulate on its own due to what is called "thermosyphoning."

The BARC scientists said their test aimed at finding out whether the cooling produced by "thermosyphon effect was enough to prevent the fuels from overheating."

They said the tests were carried out by deliberately turning off the coolant pumps when the reactor was operating at power levels "corresponding to decay heat following reactor shut down."

Reporting in the journal CURRENT SCIENCE, they said "it was the first time such a test was done in an Indian nuclear power reactor."

Defense Minister Announces New Missile Systems

93WP0126A Bombay THE TIMES OF INDIA in English 6 Mar 93 p 7

[Article: "'Prithvi' Induction Next Year"]

[Excerpt] New Delhi, March 5 (PTI). The 'Prithvi' and 'Trishul' missile systems are expected to be inducted into the armed forces during 1993-94 in view of the excellent repeated performance data obtained, the defence minister, Mr Sharad Pawar, informed the Lok Sabha today.

Development work of 'Akash' and 'Nag' is expected to be completed by 1995 after which both missiles are likely to enter service use, the minister informed Mr Sribballav Panigrahi in a written reply. [passage omitted]

Radar Developed for 'Akash' SAM Missile

93WP0124A Madras THE HINDU in English 2 Mar 93 p 11

[Article: "Radar That Can Track 100 Targets Developed"]

[Text] New Delhi, March 1. Scientists in the country have achieved a major success by developing the phased array radar, critical for its 'Akash' surface-to-air missile, according to the Scientific Adviser to the Defence Minister, Dr. A.P.J. Abdul Kalam.

This radar, which the West is not willing to sell in India, can track over 100 targets at a time. This critical component in the nations integrated guided missile development programme (IGMDP) has been developed by the Defence Research and Development Organisation (DRDO), Dr. Kalam, who is also heading the DRDO, said.

The Defence Ministry has identified several critical areas for development as its peaceful missile development programme has been viewed with suspicion in the West, he told reporters here on Sunday.

Dr. Kalam, regarded as the brain behind the successful missile programmes, said the U.S. decision to impose a ban on the Indian Space Research Organisation (ISRO)

and continued threat of a complete ban under the missile control technology regime (MTCR) had given a fillip to India's missile programme.

False propaganda: Criticising the West for overreacting to India's missile development programmes, Dr. Kalam said, science and technology had progressed so fast that even if the West wanted to curb India's missile programmes, it would not succeed.

The multinational defence manufacturers with the help of foreign media were 'constantly bombarding us with false propaganda' on India's defence research programmes. Further, he said 'the West also had an ulterior motive behind such moves as they want their defence equipment production units to run three shifts.'

Dr. Kalam said the 'Prithvi' surface-to-surface battlefield tactical missile designed for the Army was ready for production while the Air Force version needed some more test firing.

All the three versions of the 'Trishul' surface-to-air missile were at an advanced stage of development. Especially, the naval version with sea-skimming ability was a "real success," he claimed.

The indigenous pilotless target aircraft (PTA) "Akshya," which the three services wanted to induct for battlefield surveillance as a force multiplier was getting ready.

The media should project the true image of defence programmes and "we should believe in our capability and celebrate even a small invention" which, Dr. Kalam said, would encourage the scientists.

Nuclear Power Project Costs Rise Sharply

BK2204130693 Delhi THE HINDUSTAN TIMES in English 17 Apr 93 p 9

[Article by HINDUSTAN TIMES correspondent]

[Text] NEW DELHI, April 16—The costs of new nuclear power projects continue to escalate while the older projects continue to lose money on one account or another, the performance budget of the Department of Atomic Energy for 1993-94 reveals.

The Kakarpar Atomic Power Project in Gujarat was estimated to cost Rs [rupees] 382.51 crore in 1981. It is now expected to be completed at Rs 1,140 crore. The first unit of the project was synchronised with the grid in November 1992; the second unit is expected to go "critical" in December 1993.

The cost of unit III and IV of the Rajasthan Atomic Power Project [RAPP] at Kota under construction has gone up to Rs 2,100 crore from the sanctioned cost of Rs 711.57 crore. The project would be completed in 1996-97.

Meanwhile, the heavily loss-making unit-I of the RAPP constructed mostly with Canadian help, has been taken over by the Government from Nuclear Power Corporation. Capacity utilisation in this unit has been very poor and loss in 1992-93 was Rs 44.19 crore. In the current year the loss may be Rs 43.25 crore. The unit has been derated to 50 per cent of its 220 MW capacity and is at present generating power sparingly. Unit-II of the same project, however, is working at 55 per cent of capacity and has managed a profit of Rs 6.18 crore on a revenue of Rs 64.63 crore. At the same time its prospect for the current year does not appear much better.

In the Madras Atomic Power Station, the breakdown in the vital calandria equipment at the core of the reactor has reduced capacity utilisation and the project has operated at a loss of Rs 283 crore on a revenue of Rs 127.82 crore.

The costs have risen sharply in the Kaiga Atomic Power Station under construction in Karnataka. From a sanctioned cost of Rs 730.72 crore in 1987, the estimated cost today is Rs 2,050 crore due to escalation of prices, interest charges on borrowings etc. The project is estimated to be completed in 1996-97, taking almost 10 years for completion.

IRAN

Nuclear Accords With PRC, Russia Approved

NC2304132793 Tehran HAMSHAHRI in Persian 14 Apr 93 p 2

[Excerpts] The Islamic Majles has approved cooperation accords on the peaceful use of nuclear energy to be signed by the Iranian Government and the governments of the Russian Federation and the PRC.

HAMSHAHRI's correspondent said that yesterday's open session of Majles deputies chaired by Majles Speaker Nateq-Nuri approved a bill on separate accords.

A majority approved the bill on the nuclear cooperation agreement with the PRC, but many deputies opposed an agreement on nuclear cooperation with Russia before it was approved. [passage omitted]

The bill for an Iranian-Russian cooperation agreement on the peaceful use of nuclear energy, approved by the government nearly six months ago, includes fundamental research and its application in the use of nuclear energy, research on safety in nuclear power stations, radiological [in English as published] and nuclear safety, and the production and use of isotopes. [last word in English]

Similarly, this agreement envisages the planning, construction, and utilization of nuclear research reactors and nuclear power stations, the production of components and the material needed for nuclear reactors, and research in laser production technology and application.

The Iranian-PRC accord, which President Hashemi-Rafsanjani signed during his visit to the PRC last year, in

addition to the cooperation in various fields stipulated in the agreement with Russia, incorporates exploration and extraction of uranium ore and production and procurement of rods for nuclear fuel used in nuclear power stations.

The Iranian Atomic Energy Organization [IAEO], the Russian Nuclear Energy Ministry, and the PRC National Nuclear Company will sign the accords, according to which the sides will adopt measures to take all the precautionary steps necessary to safeguard the confidentiality of information, including industrial and commercial secrets [asrar] in the agreement.

At the same session, Majles deputies also approved a bill to approve a resolution amending Article 6 of the Islamic Conference Organization. [passage omitted]

Tehran To Allow Checks on Nuclear Installations

Plans To Make Concessions

LD2704133693 Hamburg DPA in German 1246 GMT 27 Apr 93

[Excerpt] Bonn (DPA)—Iran evidently plans to make considerable concessions concerning the checking of nuclear and chemical installations in order to counter accusations by the United States and other Western countries that Tehran is involved in a large-scale ABC [atomic, biological, chemical] weapons program. This was stated by Hans Stercken (Christan Democratic Union), chairman of the Bundestag Foreign Affairs Committee, today after talks with an Iranian parliamentary delegation in Bonn.

"The willingness of the Iranians to submit themselves to all checks far exceeds my expectations," Stercken told DPA. "I have never heard this stated so clearly before." After the meeting, Stercken also stressed that he has no doubts that the German engineer Helmut Szimkus (58), sentenced to death in Tehran for spying for Iraq, can expect a reversal of the verdict. [passage omitted]

Plans for Inspections Proposed

LD3004144293 Hamburg DPA in German 1146 GMT 30 Apr 93

[Text] Bonn (DPA)—Iran is hoping that after its offer to open up all its nuclear and chemical installations for German and international inspections progress will now also be made in the dispute about the German nuclear power station at Bushehr, whose construction was suspended after the Islamic Revolution in 1979. The deputy speaker of the Iranian parliament expressed this hope speaking to journalists today after a week of talks with the German Government and deputies.

Tehran's proposal to allow comprehensive inspections has received a positive welcome in Bonn. Both sides agreed to discuss the Iranian proposal and its practical implementation further. The reactor in Bushehr has been mentioned in this context, but no new agreements have been made. Tehran insists that construction of the installation should continue, saying that it has already invested more than 5 billion Deutsche marks [DM] into it. In the past the Federal Government refused to grant further permissions. There is concern in Bonn that Iran might use the nuclear technology transferred in connection with the project for military purposes.

Rowhani, who also met Chancellor Helmut Kohl on Thursday evening, said his talks were "very good, useful, and constructive." All critical points were discussed openly and frankly. Kohl stressed that Germany, like Iran, is serious about improving relations in all areas. Tehran, Rowhani said, regards a more intensive German-Iranian dialogue as a model for comprehensive dialogue between Europe and the Islamic countries.

Rowhani, who is heading a delegation of Iranian parliamentary deputies, met the chairman of the Bundestag's economic committee, Friedhelm Ost, today. The two politicians agreed that the current trade imbalance must not be allowed to grow further. In 1992 Germany had exported goods worth nearly 8 billion DM to Iran while imports from the Islamic Republic fell to DM 1.1 billion. Rowhani said Ost promised he would encourage German companies to invest in Iran and make efforts to ensure that Germany resumes the major part it once played in the training of Iranian professionals.

'Willing' To Accept Oversight

AU3004134993 Frankfurt/Main FRANKFURTER RUNDSCHAU in German 30 Apr-1 May 93 p 7

["DOE" report: "Iran Once Again Broaches the Subject of the Nuclear Power Plant"]

[Excerpt] Bonn, 29 April—To ensure completion of the nuclear power plant of Bushehr, which was started in 1975, Iran is willing to "subject" its nuclear program "to any kind of control." Observers of the International Atomic Energy Agency or the German Government could station themselves "permanently" and "at Iran's cost" at the construction site of the 2,400-megawatt reactor to monitor the use of the delivered components, Hasan Ruhani, deputy speaker of the Tehran Parliament, told journalists on Wednesday evening [28 April]. His country does not have any means of mass destruction and, on the contrary, wants to cooperate with Bonn in establishing a zone free of nuclear, biological, and chemical weapons in the Middle East.

The work in Bushehr was halted by the Siemens Corporation from Munich, which headed the project, during the Iranian revolution in 1979. Since then the FRG Government has refused to grant export permits for the necessary reactor parts. Tehran, for its part, is urging the completion of the facility, which has so far cost 8 billion German marks, according to Ruhani. [passage omitted]

IRAQ

Authorities Agree to UN Removal of Uranium

NC2404120193 Paris AFP in English 1105 GMT 24 Apr 93

[Text] Baghdad, April 24 (AFP)—Iraq authorities agreed here Saturday to ship abroad the last known batch of enriched uranium made for the country's atomic weapons program, the head of a U.N. team said here.

The U.N. and Iraqi officials signed "a memorandum of understanding on what Iraq can do to assist us in the removing of the (nuclear) fuel," weighing 40 kilograms (88 pounds), Maurizio Zifferero said.

Removal could begin in July or August, according to the Italian who headed a 17-member team which ended a week-long visit to Iraq.

"The removal of the uranium would take about six months and needs a lot of technical assistance from the Iraqi side. This is not a simple operation," he said.

"The operation will require substantial support both in terms of equipment facilities and manpower from the Iraqi side," he said. "Iraq is obliged to bear the costs of the transfer which will be very high."

While awaiting a plan to remove the material, previous U.N. missions had left the uranium at two nuclear facilities, including Tuwaythah, 30 kilometers (18 miles) southeast of Baghdad.

In December a U.N. mission said it had destroyed material used to enrich uranium at the Tuwaythah facility, which allied warplanes hit during the 1991 Gulf war.

Zifferero declined to say where the uranium would be sent.

Baghdad To Surrender Nuclear Fuel to IAEA

AU2704073793 Paris AFP in English 0201 GMT 27 Apr 93

[Text] Vienna, April 27 (AFP)—Iraq has agreed in principle to allow the International Atomic Energy Agency (IAEA) to remove 35 kilograms (70 pounds) of nuclear fuel from a site southeast of Baghdad, IAEA spokesman David Kyd said here Monday.

The nuclear fuel, currently under seal at Al Tuwaitha, will "very likely" be sent to Russia, reliable sources said.

The operation will be by air, in two trips, and may begin in July and be completed towards the end of the year, the sources said. The cost, estimated at 20 million dollars, is to be borne by Baghdad under the U.N. sanctions imposed on Iraq in the wake of the Gulf war.

The agreement in principle between IAEA and Baghdad sets out the steps the Iraqis are to take before the dangerous materials are transported, and was signed last week by IAEA Deputy Director-General Maurizio Zifferero during a visit to Iraq, Kyd said. Zifferero returned to Vienna last weekend.

The IAEA must first sign a parallel agreement with Moscow, the sources said.

The "very complicated" operation involves "very delicate materials that must be carefully packaged," Kyd said, noting that the containers must be able to withstand the force of a possible plane crash to prevent contamination.

France and Britain had at first expressed interest in taking the nuclear fuel, which originated in Russia and France. Moscow later made a lower bid for carrying out the operation.

RUSSIA

Brazil To Buy Military, Space Technology

93WP0144A Moscow KOMMERSANT-DAILY in Russian 14 Apr 93 p 10

[Article by Anastasiya Romashkevich, Russian delegation in Latin America: "Brazil Interested in Russia's Space Technologies"]

[Text] *The two-week tour of Latin America begun yesterday by a delegation from the Ministry of Foreign Economic Relations of Russia, headed by the minister himself, was the realization of longstanding plans of Sergey Glazyev, who previously supervised the work of the bilateral commission on trade and economic relations with Brazil and Argentina. This delegation began its mission with Brazil as well. The purpose of the trip was to enliven trade and economic relations between Russia and countries of Latin America. During the course of the trip the delegation also intends to conclude contracts for the sale of products of the Russian military-industrial complex and also dual-purpose space technologies.*

The visit of the Russian delegation is regarded in the Ministry of Foreign Economic Relations within the framework of the strategy for activating foreign economic relations. As for the Latin American region itself which, unlike the West, is interested in acquiring from Russia not raw material but manufactured products, Russia might not merely earn foreign currency here but also partially solve the problem of conversion, having gained access to a very promising market for dual-purpose arms and technology. Up to this point it has belonged almost exclusively to the United States.

According to the assertions of certain Western experts, recently Russia has wanted to locate abroad, primarily in "new industrial countries," a number of enterprises of the military-industrial complex—in the form of joint ventures or subsidiaries—and thus partially remove them from the area in which Western competitors are increasingly interested.

For its part, Brazil, represented by its largest financial-investment government corporation, FINEP, in October 1992 had already expressed a desire to purchase solid-fuel rocket engines from Russia. At that time there was frequent talk about the sale of prepared products and also the discovery of Russian enterprises interested in the creation of joint firms or the establishment of technical cooperation in this area.

Apparently, during the course of the present trip representatives of the Ministry of Foreign Economic Relations will try to establish stricter centralized control over exports, including military products, to Latin America.

Brazil is also interested in cooperating with Russia in the space area, particularly in the development of a system for inertia control of missile carriers. Moreover, Russia could receive a proposal to reconstruct, in conjunction with U.S. firms, the space vehicle launching site Alkantary in the state of Maranhao, whose geographical location makes it possible to save up to 30 percent of the rocket fuel when launching satellites.

KOMMERSANT will report on the results of the trip on 28 April.

Two More Submarines To Be Delivered to Iran

LD0205204293 Moscow ITAR-TASS in English 2031 GMT 2 May 93

[by ITAR-TASS correspondent Oleg Kuzmin]

[Text] Tehran, May 2 TASS—Two more submarines ordered in Russia will shortly be delivered to Iran and will equip the Iranian Navy, Acting Commander of the Iranian Navy, Admiral Abbas Mokhtaj said in Bushehr, ETTELA'AT newspaper reported on Sunday.

A diesel submarine built at Russian shipyards has already been delivered to Iran. It is used now in exercises in the Persian Gulf.

Admiral Mokhtaj said that in addition to repairing equipment damaged during the war with Iraq, Iran plans to build new naval ships to reinforce its navy. At the same time, the admiral stressed that the Iranian Navy does not threaten neighbours in the Persian Gulf. He proposed to ensure by joint forces the security of the region, also of the strategically important Strait of Hormuz.

Kurchatov Institute's Shmelev on Nuclear Waste

93WP0116A Oslo AFTENPOSTEN in Norwegian 22 Mar 93 p 2

[Article by Ole Mathismoen: "Nuclear Waste Must Be Made Safe Now"]

[Text] **A Russian nuclear expert warns the West against waiting for political calm in Russia before helping to ensure the safety of nuclear waste.**

"By that time, the problems in various places can become much more serious," says nuclear expert Vladimir M. Shmelev of the Kurchatov Institute in Moscow. He is leading work on the nonproliferation of nuclear weapons within the Council on Nuclear Cooperation, where the former Soviet states are members. Shmelev has many years of experience in the International Atomic Energy Agency and in the Soviet nuclear bureaucracy. His first job was the start-up of the Soviets' first nuclear power plant in 1954.

Collapse

The senior individual within the Russian nuclear industry says that Russia continues to find itself in a transition phase following the Soviet Union's collapse.

Incidents, accidents, inadequate safety, and lax handling of waste at nuclear installations must be attributed to this phase.

"At the same time, the nuclear industry has come through this phase significantly more easily than other industry. The process of improving safety procedures, replacement of equipment, training, and the like, which began in 1986 following Chernobyl, came to a halt in 1990-91. Everything in the Soviet Union, from regulations and training to equipment deliveries, was centrally directed from Moscow. When the Soviet Union collapsed, this system also collapsed. To a significant degree, this also had an impact on the security of nuclear installations, within the chemical industry, the gas industry, and other areas. Even though Russia came out better than several of the republics, much has also gone slowly here. We are now in the process of getting going again. But this takes time, and it costs money. Money we do not have," he says.

Too Negative

Shmelev understands that the Western governments are reluctant to send money to Moscow and that Western companies are reluctant to invest: "More than credits, Russian needs Western countries to invest on Russian soil, hopefully in the nuclear industry as well," he says.

He does not have the detailed knowledge to be able to comment on many of the individual incidents that have been mentioned in the Western media. In general, he is of the opinion that the situation has been described too negatively:

"We have the technology to handle the radioactive waste in an entirely responsible manner. I am not especially disturbed about the low- and medium-level radioactive waste. This has little significance compared with the highly active fuel waste. We, of course, have strict procedures for handling and storing the latter," says Shmelev.

But he allows that everything has not always gone as it should, and that the military authorities have traditionally "been in more of a hurry and have not been as strict with the waste as the civilians." He protests, however, that the accumulation of such waste on the Kola Peninsula is of a temporary nature and will only last until society's machinery again comes into full operation. "This is a typical area where Norway could very easily help out. Because of the low value of the ruble, for example, with very little funds, one could help the icebreaker fleet get its waste delivered to the reprocessing facility at Mayak.

"It is entirely a question of money, not of technology and not of will. Nobody in the Russian nuclear industry is evil and wants poor handling of waste or low safety," he says.

No Brain Drain

Shmelev also rejects assertions concerning a brain drain of nuclear experts and large-scale sale of radioactive raw material following the Soviet collapse.

"During the last 20 years, thousands of U.S., British, and French nuclear physicists have taken jobs in other countries, and have trained nuclear experts. The same thing is now happening with us. We are getting permission to travel out. Some are doing this, but the most are staying. It has not been noted that our leading weapons experts, or most central nuclear physicists, have left. There have been a few thefts of nuclear material, but not of any sort of which there is not already large amounts on the world market.

"Just as unreasonable are assertions that we are dumping enriched uranium on the world market. We can participate in a trade that we were not a part of earlier. And the point is that we have very good technology, so that we produce enriched uranium significantly less expensively than anyone else in the world," says Shmelev, who at the moment is a guest of the Center for Technology and Human Values at Oslo University.

He sees a bright future for his branch. "Nuclear power will have a renaissance when most people understand how safe the new generation of nuclear reactors is. After Chernobyl, it was impossible for a politician to be elected in Russia if he did not distance himself from nuclear power. This is in the process of changing," he says, and points to the reports that nuclear power plants in Russia are the only sector that can point to an increase in production last year.

Reportage on Exporting of Red Mercury

Wrongdoing Alleged

93WP0137A Moscow PRAVDA in Russian 17 Apr 93 pp 1-2

[Article by Georgiy Portnov and Stanislav Shumilov: "Yeltsingate"]

[Text] **A Democracy Mixed Up in Red Mercury Is Capable of Shattering the Country.**

For the skeptical reader who is ready to accuse the authors of pretentiousness merely on the strength of a single headline, let us say immediately that this is putting it mildly. Compared to what we are talking about now, the famous Watergate case, which virtually culminated in the impeachment of U.S. President Richard Nixon, and the sensational Iran-Contra affair, which almost cost U.S. President Ronald Reagan his head, were "childish pranks." There it was a question of secret, unlawful operations sanctioned by the highest officials in the United States who were pursuing their personal political (in the first case) or personal-national (in the second) interests, that when they were discovered delivered a palpable blow to the prestige "of democracy itself in the

world order." Those scandals, however, did not affect the very foundations of U.S. national security, to say nothing of threatening national security out of very, very mercenary considerations. In the dirty affair of Russian red mercury, both the former and the latter are found.

Paradoxical though it may sound, citing official, confidential, and top secret documents that have come into our possession, we nevertheless are disclosing no state secrets. How can something be a secret when it is not hidden from a potential enemy but is in fact willingly put up for sale?—of course, for a decent price and on condition that a reciprocal "discretion about business relations" is observed. It is a well-kept secret, only for our own people, so that, deceiving them once again, we can conceal from them the unbecoming, one might even say very shameful "backstage infighting" at the very highest level of the power structures in Russia. Infighting that is capable of bringing the victors both fabulous material prosperity and, they hope, a miraculous recipe for their political survival.

Let us repeat it: There is documentary confirmation for every line of this article. But we have not named exactly the enterprises manufacturing red mercury, or the names of some of the associates of the Foreign Intelligence Service and the Russian Federation Ministry of Security who one way or another are involved in this story.

But Was There a Boy?

Late in January this year there was a news conference at the Ministry of Foreign Affairs press center on Zubovskiy Boulevard. Academician Yevgeniy Primakov, director of the Russian Foreign Intelligence Service, and Vyacheslav Trubinkov, his deputy, held the press conference for Russian and foreign journalists on the occasion of the presentation of the first open document in the history of Russian intelligence—a report on the subject "A New Challenge After the Cold War: Proliferation of Weapons of Mass Destruction." After an introductory address from Primakov and questions on the subject, other unrelated questions were asked; it is not everyday that there is a chance to see the leadership of the Russian Foreign Intelligence Service in the flesh. Almost at the end red mercury was mentioned. The response was sensational because it was so categorical: The substance, which has suprising properties, and concerning which so much fuss had been in the domestic and foreign press just does not exist in nature. This, it was stated, is confirmed by the top scientific authorities, the luminaries of physics and chemistry.

This is what was stated, verbatim: "Scientists from the Russian Academy of Sciences confirm that this does not exist in nature. Deals with so-called 'red mercury' are used for connected mafia structures as a means of laundering 'dirty money,' including income from the drug business. In reality, precious metals and other elements are being moved under the guise of 'red mercury.'"

The conclusion to be drawn was unambiguous: Lads, don't waste ink and paper. La comedia e finita. There is no "boy." He was killed in the womb.

But this is not so! There is a "boy." And not just any boy, but a real superbaby. And to be absolutely accurate, he is a "youth" 24 years old. And Ye. Primakov himself describes the fact of his existence as follows in a report of 24 March last year , number 156/356,in the name of the Russian Federation state secretary and first deputy chairman of the government G.E. Burbulis (we shall be returning to this many times and so for the sake of brevity we shall be referring to it simply as "the Primakov report"):

"The first synthesis in the USSR of 'red mercury' or the mercurial salt of antimonous acid, $Hg_2Sb_2O_7$, was done in 1968 in the accelerator at... Because of its technical and operational features this accelerator makes it possible successfully to alloy it with strontium, cersium, and other isotopes to produce 'red mercury.'

"The raw material is manufactured at enterprises of the former USSR Ministry of Atomic Power and Industry in the cities of... (we omit their names—authors). After the synthesis stage at the above-named enterprises the raw material is implanted with a radioactive isotope in the accelerator... As a result of this a product with a density of up to 23 units is obtained. Shelf life of the finished product varies between four and 12 months depending on the alloying isotope.

"It is the opinion of nuclear experts that abroad there is only one accelerator, the one at the European Center for Nuclear Research (CERN) in Switzerland, that could be used to implant 'red mercury.' However, in order for it to be used for this purpose it is necessary to carry out a whole series of studies and do further work on the design. This factor, and also the availability in the states of the former USSR of significant quantities of mercury raw material determine our country's special position in the production of 'red mercury.'

"At this moment the price of 'red mercury' in the world market is $320-340 per gram for a product with a density of 20/20, and $340-380 per gram for a product with a 20/23 density, which is 10 times higher than the price of gold.

"Shipments are made in standard leaded containers weighing about 30 kilograms, designed to carry five-gram samples of radioactive materials and mercury. Thanks to the high density of the material, this kind of container is not very large."

Let us now return in time to the sources of the academic "smokescreen" that was drawn around "red mercury" following the collapse of the Soviet Union (where, you will agree, they knew how to guard state secrets). For with the change of ideological benchmarks to the primitive call of "Make yourself rich if you know how, grab as much as you can"—a call as subtle as a Neanderthal's club, and therefore irresistible for scoundrels—this same

"red mercury" poured through the "transparent" borders like flour from a worn out wicker basket.

A Year Ago

The authorities, however, did not throw this shadow across the wickerwork to help that same Russian Federation Ministry of Security to close off the criminal channels for exporting "red mercury" but rather to push "private competitors" away from this profitable business and monopolize it and place it at the secret service of the president of Russia and his entourage.

So, let us go back almost a year. For a start we suggest that you become acquainted with the official expert opinion on "red mercury" that appeared at the time, in which the following was affirmed:

"The technical specifications disseminated for 'red mercury' contain indicators that are not applicable to any of the chemical products being produced. Chemical compounds of the type $Hg_2Sb_2O_7$ synthesized in laboratories do not possess the properties and do not meet the indicators set forth in documents that have been unofficially disseminated; thus, strictly speaking, compounds of the type $Hg_2Sb_2O_7$ are not analogues of 'red mercury'... They have never been synthesized at enterprises of the Ministry of Industry, at enterprises of the Ministry of Atomic Energy, or in sector or academy institutes, and no product has been produced that possesses the properties and characteristics of the indicators ascribed to 'red mercury.' Neither have any direct consumers of this product been found, and stock-jobbing demand for it exists only among the numerous middlemen. In the search for 'red mercury' stock-jobbing demand at excessively high prices does occur for metallic mercury and its compounds of the type as red mercury oxide, HgO, HgS, and so forth, which are common chemical compounds produced on an industrial scale and are not strategic raw materials or sources from which they can be obtained.

"Based on the above, the conference believes that there are no reasons to restrict exports of compounds of mercury on the grounds of strategic or defense considerations."

A "double play" that is pure genius in terms of its shamelessness: At a single stroke they cunningly both "excluded from nature" the very concept of "red mercury" and give this supposedly nonexistent substance the "green light" for export. Bravo! Nine signatures are placed beneath the document. It would be tiring to list them all, so we shall limit ourselves to the first two—Ye.G. Kudryavtsev, chief expert for the Russian Federation Ministry of Atomic Energy Main Scientific Administration No. 4, and V.M. Skorikov, chief of the oxides physicochemical analysis laboratory and professor at the Russian Academy of Sciences Institute of General and Inorganic Chemistry.

In the best traditions of sociopolitical campaigns conducted by Agitprop, articles appeared in shoals in the newspapers and journals in the Russian Federation, and through the mouths of scientific authorities the "myth" about red mercury was dispelled. There is no need to be either extrasensory or simply a good analyst to see the firm, guiding hand in this stream of pseudo-unmasking. The style gives itself away. A typical example was a piece in the popular science journal KHIMIYA I ZHIZN in February 1992. A "masterly" headline is set there: "The Newspapers Talk Nonsense, But the Mercury Is Not Turning Red."

In an interview with Yu.A. Zolotov, director of the Institute of General and Inorganic Chemistry, and his associates Skorikov (the very same!) and Butskiy, he affirms the following in particular:

"The entire story evokes a sense of bewilderment. On the one hand there are quite real commercial proposals from brokerage companies in the West that are ready to pay hundreds of thousands of dollars for a kilogram of a certain substance. On the other hand, the formula for the substance that they are indicating has nothing in common with the unusually detailed technical specification. This substance is the mercuric salt of antimonous acid—Hg_2SbO_7. There is no doubt that a powder of the substance with the formula specified does exist. But in 18 months of our work, which has been essentially to conduct a physical and chemical analysis of various systems based on mercury and antimony, it has become clear that a substance containing antimony and mercury may be red, and liquid, but not at room temperature. And a density of 20.2 grams per cubic centimeter for a mercuric salt is in principle unattainable because metallic mercury itself has a density of 13.6 grams per cubic centimeter.

"The possibility is not excluded that our colleagues abroad have come to the same conclusion, for to obtain from relatively inexpensive ingredients a compound that is worth 10 times more than gold is a very enticing prospect, like finding the philosopher's stone. If they could have done it they would have done it long ago, not sent emissaries abroad, that is, to us.

"As far as the contraband samples of 'red mercury' confiscated at the border are concerned, they are all pure mercury with a density of 13.6 grams per cubic centimeter, true, colored with a varnish with a nail brush or with crushed brick or some such. It is difficult to suppose that some madman would lay out everything he has for this kind of 'treasure.' Incidentally, the field of application for the sought-after 'red mercury' is absolutely unknown."

That was the conclusion! The "field of application for red mercury" is unknown to the expert scientists. To make up for this, on behalf of the Russian Federation Foreign Intelligence Service Academician Ye. Primakov (an academician in the humanities) informed Burbulis quite authoritatively (all from that same "Primakov report") as follows:

"The main avenues for the use of 'red mercury' are these:

"—the production of very delicate fuses for conventional bombs;

"—the production of firing mechanisms for nuclear bombs;

"—to start up nuclear reactors;

"—to manufacture antiradar coatings for military equipment;

"—the production of self-guidance warheads for missiles possessing extreme target accuracy.

According to data that require further verification, the substance can be used in other very new technologies unknown in our country (the production of very high speed electronic components, special sorts of paper for bank notes, removing gold from the ground and industrial waste, and so forth).

A preliminary check by intelligence resources has shown that since 1988, within the framework of the campaign to enhance the competitiveness of American industry, all publications on fundamental and applied research in the field of mercury enrichment have been taken out of libraries in the United States. Information has been obtained that work with 'red mercury' has been done by such major companies as Rockwell, General Dynamics, Westinghouse (United States), Messerschmitt-Boelkow-Blohm and Siemens (the FRG), and the British Aerospace Corporation (Great Britain)."

So how does the above jibe with the thesis of the "experts" from the Russian Academy of Sciences to the effect that "no direct consumers of this product have been found"?

However, the "luminaries" themselves are not playing pick-up-sticks in appeals of a confidential nature. Thus, a request to Ye. Gaydar, deputy chairman of the Russian Federation Government, dated 19 February 1992, numbered 14329/2-046, from M. Amirkhanov, director of the Russian Academy of Sciences Sochi Scientific Research Center:

"The Russian Academy of Sciences Scientific Center earnestly requests you to give instructions on giving the Russian Academy of Sciences Scientific Research Center permission to acquire and subsequently supply for export the mercuric salt of antimonous acid for use by an end user in accordance with international standards, in the amount of 6,000 kilograms annually.

"The Russian Academy of Sciences Scientific Research Center project will be realized jointly with a number of organizations including the Russian Academy of Sciences Ural Department Simvol Scientific-Technical Production Association. At this time the project has already been worked out in detail: contacts have been established with the manufacturing plants and a technical scheme has been drawn up for the purchase and transport of the product, the market in the West has been studied, and the most reliable and appropriate buyers selected.

"In the event of a positive resolution of the question the Russian Academy of Sciences Scientific Research Center believes it possible to provide about 500 (five hundred) million U.S. dollars for the Russian budget within a very short period (about $100 million in the next three or four weeks), which would help in implementing the government program and resolving very acute social and production problems among the collectives of enterprises in Moscow and the country as a whole.

"We are convinced that the almost instantaneous arrival of these hard currency assets would significantly strengthen the authority and positions of democracy of the government of Russia...

"It has been agreed with the Ministry of Defense... It has been agreed with the Russian Federation Ministry of Foreign Affairs Committee for Foreign Trade Main Engineering Administration.... It has been agreed with the manufacturing plants to sell the product under the above-mentioned program..."

Curious, is it not? In public the Russian Academy of Sciences utterly debunks the very concept of "red mercury." In private it whispers into the ear of the real prime minister of Russia himself: "A proper and profitable business. Let us act together."

Burbulis and the Bomb

Allah is with them, the academicians. The "fulminating mixture" with the "red mercury" was also being brewed closer to the boil at a higher level. On 10 January 1992 a letter was sent to Russian Federation State Secretary G. Burbulis by O.F. Sadykov, president of the Promekologiya Concern, (a colorful personality, but we leave the details of his biography to examination by competent organs). Here is an extract from this remarkable document:

"I am turning to you with respect to a problem of extraordinary economic and military-political importance for Russia and its top leadership.

"In recent months there have been increasingly frequent requests from foreign companies to the concern, asking us to supply them with an expensive product named 'red mercury' supposedly produced in the Ural... Preliminary analysis has made it possible to establish the following:

"1. In the opinion of a number of independent experts the preparations indicated (apart from purely civilian uses) can be used in nuclear-chemical production and plastic explosives of colossal destructive force. Under the guise of 'red mercury' it is in principle possible to smuggle strategic materials for export through channels of the USSR Ministry of Atomic Power and Industry.

"The export of 'red mercury' should therefore be strictly controlled independently from the USSR Ministry of Atomic Power and Industry by the certification service.

"2. Official state organs that regulate the export of special materials have never granted any permission for the export of 'red mercury' and no analyses of export consignments have been conducted. Notwithstanding, according to information from a number of our foreign partners, materials marked 'red mercury' have been exported for about the last 18 months. The terms of the exports were such that under the guise of 'red mercury' it has been possible to export many strategic materials (including fissionable materials)...

"... 4. Proceeding on the basis of the highest state economic and political interests, it seems to us advisable to take the following urgent steps:

"—by secret directive of the president to grant the Promekologiya Concern the right to produce, buy, store, transport, certify, and deliver 'red mercury' for export, once agreement on the concern's future activity has been reached with the Russian Federation Ministry of the Economy and Finance (the export controls department), the Russian Federation Foreign Ministry Committee for Foreign Economic Relations (the nontariff regulations directorate), and, MOST IMPORTANTLY, the Russian Federation Ministry of Security.

"—to notify official importers about the legal procedure for exports of 'red mercury' adopted for 1992...

"—to notify potential suppliers about the institution of a legal channel for the export of 'red mercury' and to link them directly to the channel controlled by the government to certify and market their goods, and at the same time to sever suppliers from criminal channels to export 'red mercury.'

"—to legalize these actions by an open directive of the Russian Federation government. Perhaps with the agreement of the Russian Federation Ministry of the Economy and Finance and the Russian Federation Ministry of Foreign Affairs, to make available additional quotas for exports by several legal entities but with mandatory certification of supplies through the efforts of the concern. IT IS VERY IMPORTANT totally to sever from this activity the previous administrative structures of the USSR Ministry of Medium Machine-Building and the USSR Ministry of Atomic Power and Inudstry, which (presumably) also created the criminal channels for the export of 'red mercury' (or something else under this name) taking advantage of the secrecy of this department and the total lack of control by the state and the secrecy of its transport flows...

"I hope that you have a correct understanding of the seriousness of the situation and I express my readiness to act strictly within the framework of the schemes agreed with you in the interests of Russia."

An astonishing document. It is as if the author is himself not quite sure about whether or not all this endeavor with red mercury is delirium. Nevertheless, he does carry through a project to the top person in the Russian state. He tempts the president of the country with enormous profits, including of a political nature. An adventurist? A man, if you will pardon the expression, who had "lost some of his marbles"? Apparently not. Sadykov achieves his purpose: He "finds understanding" from Yeltsin.

From the bowels of the presidential offices there appears a top secret directive from the government of the Russian Federation, "On the Promekologiya Concern," No. 75-RPS [not further identified], dated 21 February 1992:

"For the purpose of comprehensively resolving the problems of environmental danger in Russia I decree as follows:

"1. To approve the program of action of the Promekologiya Concern to restore the zones of ecological disaster and to develop, produce, and bring into use environmentally clean resource-saving and energy-saving technologies and special equipment, materials, and gear designated for nature conservation.

"2. In order to create conditions for self-financing by the concern for environmental and energy projects agreed with the president of the Russian Federation, to grant the concern permission to manufacture, purchase, store, transport, supply, and sell red mercury for rubles and freely convertible currencies within the limits of an annual quota of 10 tonnes.

"To establish that the concern's profit derived from the sale of red mercury and allocated to fund the concern's environmental and energy programs shall be exempt from payment of taxes into the republic budget. The size of compulsory hard currency deductions from the concern's income to the state shall be reduced by the actual sums used to purchase technologies, equipment, raw materials, and gear used for environmental and energy purposes.

[Signed] "B. Yeltsin, president of the Russian Federation."

Turn your attention to the phrase "shall be exempt from payment of taxes into the republic budget," which is unprecedented in law-writing. The meaning here is obvious: There are no tax payments and hence no deals with red mercury. Everything is being done on the sly. The opposition, knowing nothing of the gigantic new sources of hard currency for which there is absolutely no accountability to the Russian Federation Supreme Soviet or the tax inspection service, keeps quiet. For the valuable red mercury is being produced at the expense of all Russian taxpayers, whether they be "red-browns" or "democrats." As for the scope for various kinds of financial abuses, in this system it is truly unlimited.

Encouraged by this turn, in a report to Burbulis dated 2 April 1992 Sadykov, now no longer expressing even the

slightest doubts about the authenticity and commercial value of red mercury, and, moreover, hastening and urging on the president's closest entourage, writes this:

"Dear Gennadiy Eduardovich,

"Having received an opportunity to act legally with respect to the secret product 'red mercury' thanks to Directive No. 75-rps of the president of the Russian Federation dated 21 February 1992, X (we are not revealing the real name here—authors) has been able to clarify the following:

"1. Through operational actions it has been established that in 1991... (here we omit the name of the enterprises and companies listed—authors) made deliveries of red mercury (RM).

"2. The organizer of the illegal deliveries is a certain V.A. Kushchev, on behalf of the Litsenitorg Foreign Wholesale Trade Association [VOO]. The authorizing documents for this were signed as follows: for the USSR Ministry of Defense... (we omit the details—authors).

"... 4. ...A certain Chernykh (from the Rosye enterprise) is acting. He allegedly has a directive (permission) from Ye.T. Gaydar, PP-GB-5-32738. Verbally he makes frequent reference to the availability of support from G.E. Burbulis. Under this cover preparations are now being made to export the latest batch of contraband RM to the Near East...

"5. The withdrawal of missiles from operational status is making it possible to steal RM. And this is an additional source of contraband..."

Additional information obtained by O.F. Sadykov from producers during negotiations with middlemen:

"...5. The Promekologiya Concern can, under a scheme agreed with the government, guarantee that 100 percent of these firms' costs will be paid by solid clients in the West. Here we are guaranteeing them profitability of 50 percent...

"6. We confirm the possibility of a flow of hard currency into Russia from RM deliveries, to the tune of $10-20 billion or more. We have orders from solid companies totaling $40 billion. (There you have it—the scale of the affair with the 'nonexistent' red mercury—authors).

"7. I confirm the TOP PRIORITY need to create a security service for the Promekologiya Concern because since our latest actions our opponents have been able to sharply increase their actions to mask earlier activity and destroy the very profitable production under the plausible pretext of conversion.

"The presidential directive has enabled us to sharply activate our scientific research work and design-and-test work on alternative energies... Powerful intellectual forces have already been recruited for the concern. Many articles will be going into series production in 1992. Some of them already during the first quarter. In recent months outstanding new results have been obtained. It is extremely important for us to obtain from you certification granting us permission for our work.

"... 9. I deem it extremely necessary to initiate practical implementation of the directive of the president of the Russian Federation. Further delay will only play into the hands of enemies of Russia's rebirth and its reform leadership. For this it is necessary to officially involve the Russian Federation Ministry of Security and Ministry of Industry in our efforts."

The next day, 30 April, Sadykov sends Burbulis "an addendum to the letter of 2 April" stamped "Of Special Importance" and even (and this was the height of skill in secret matters) hand written:

"Today it has been established that in the Sixth Directorate of the Committee for State Security under Kryuchkov, Y (we do not name the name—authors) was in charge of the red mercury problem. He will also probably retain supervision over producers within the system of the present Ministry of Security. Key information will probably be held in a personal safe.

"According to competent estimates, up to 80 percent of officers of the former Committee for State Security First Chief Directorate involved in red mercury operations were transferred to the present Ministry of Security and will prevent any investigation of past events.

"With respect to red mercury, our Ministry of Security is UNRELIABLE. This must be reported to the minister of security, Barannikov. It is the more important since all matters primarily affect the Promekologiya Concern... Perhaps it is worthwhile for Barannikov to speak personally with Y or to set up surveillance.

"There is danger for everyone involved.

"On 3 April talks were held with G.R. Maslyukov, vice president of the M Concern, and A.N. Teterev, a Ministry of Defense representative."

Full Understanding Was Achieved...

"...They are ready to supply to the market through the VSYu Corporation the assumed quota of 35 tonnes. (Attention: The president granted an annual quota of 10 tonnes, but Sadykov's appetite has already grown to 35 tonnes, or up to $12.25 billion—authors). They are not recommending that other middlemen be involved. The system is sufficiently tight through us. The circle has been closed...

"It is necessary to place 'secret' red mercury in the service of Russia quickly. We have everything ready.

"Yours, O. Sadykov."

The fact that the word "secret" is placed within quote marks shows, as you see, that for Sadykov it is no longer a secret.

It is remarkable that even N.A. Yermakov, the chairman of the presidential Committee To Safeguard the Economic Interests of the Russian Federation, is evidently unaware of presidential directive No. 75-rps. For on 4 April he sent Yeltsin a memorandum entitled "On the Export of Red Mercury," in which, in particular, he noted the following:

"Information that has come to the notice of the committee indicates that there has of late been greater interest on the part of American and French business circles in acquiring red mercury, which is produced at our closed enterprises...

"The total volume of red mercury deals proposed by foreign companies is $100 million (so what about Sadykov's 'napoleonic' projects—authors). On our side activity is seen in this matter on the part of a number of commercial structures that, according to reliable information, engage in the practice of concealing part of their hard currency earnings and holding financial assets acquired in this way, abroad.

"The commercial efficiency of foreign trade deals in red mercury appears indisputable since its export price of $350,000 per kilogram significantly exceeds the production costs...

"Taking the above into account we have suggested that it would be advisable to assign the Russian Academy of Sciences, with the participation of experts from the Russian Ministry of Industry, Russian Ministry of Atomic Energy, the Russian State Committee for Supervision of Nuclear and Radiation Safety, the Russian Ministry of Foreign Economic Relations, the Russian Committee to Safeguard Economic Interests, and the Russian State Customs Committee, to study the problem and submit proposals on exports of red mercury.

"We request that you consider this."

Gaydar's instructions were written on Yermakov's memorandum on 17 April:

"To the Russian Academy of Sciences (Ye.P. Velikhov).

"Please examine this with the participation of the Russian Ministry of Industry, Russian Ministry of Atomic Energy, Russian Ministry of Foreign Economic Relations, and the Russian State Customs Committee."

Another thing that strikes the eye is that Sadykov's security service at the Promekologiya Concern, with respect to unmasking illegal deliveries of red mercury abroad, is significantly behind the Russian Federation Foreign Intelligence Service, which back in March (the "Primakov report") informed Burbulis as follows:

"The main channels for exporting the product from the territory of the former USSR pass through middlemen in Hungary, Bulgaria, Poland, Switzerland, Germany, Austria, and Finland. End users of the mercury are major companies in the United States and France working in the field of nuclear weapons production, and the aerospace industry, and also the Republic of South Africa, Israel, Iran, and Arab countries (Iraq, Libya, and others) striving to acquire nuclear weapons.

"Thus, the Hungarian Company Feromet KFT, whose chief, Laszlo Sege, used to work in Russia, is looking for an opportunity to supply 'red mercury' for an American company... On instructions from the Republic of South Africa a search for suppliers of 'red mercury' is being made by the R.P. Trading Company (Canada) and EURO-Professional (United States). During the course of inspection of Iraqi nuclear facilities, inspectors from the International Atomic Energy Agency found a considerable number of documents in Baghdad indicating that country's interest in acquiring 'red mercury.' In Libya the records show approaches made by local citizens to employees of Russian missions abroad, offering to buy this substance. In October 1991, when searching a person suspected of involvement in the distribution of drugs, the Finnish police found three kilograms of mercury... In Milan an investigation is under way into the affair of the three Hungarian citizens and an Austrian who was a former citizen of the USSR, all accused of illegally importing 'red mercury' onto the territory of Italy.

"In October 1991 the Austrian authorities seized a shipment of 'red mercury' addressed to a company whose owner is former Soviet citizen A.V. Kuzin, who is being watched by Interpol.

"Information has been obtained about operations of intelligence services concerning the seizure of batches of mercury in Bulgaria and Czechoslovakia.

"The largest middleman in the mercury trade is - allgeselschaft in West Germany. The Bulgarian company Vakha, known in business circles as being involved in the drug business, is showing considerable interest in making a deal with the substance. According to representatives of this company, they now have at their disposal a considerable quantity of 'red mercury' obtained in Russia. Moreover, according to the Bulgarians, a document giving 'their people' a monopoly right in Russia to export 'red mercury' through official channels has to be submitted to the government of the Russian Federation for confirmation.

"There is also information that in July 1991 the Hungarian company Indra unofficially purchased 54 kilograms of 'red mercury' through the Intermedservice joint-venture company, and then resold to the United States. In August 1991 the Austrian company Melitit purchased 600 kilograms of mercury from one of the Russian auto plants at $210,000 per kilogram and then resold it in the United States at a considerably higher price...

"According to available information, a certain A.V. Yakovlev has been trying to help Swiss companies with supplies of 'red mercury,' promising the Swiss support in

resolving this question on the part of the Russian Federation government. This situation has caused misunderstanding on the Swiss side, including in connection with the fact that a representative of the Russian state organs conducting similar negotiations was in Switzerland at the invitation and expense of a local commercial structure, which in Swiss government circles was regarded as not really ethical, and in some cases could provide grounds for regarding it as official malfeasance.

"In recent months a significant number of proposals about 'red mercury' have been recorded in Moscow exchange circles. D. Kapitonov... proposed the sale of two shipments of the substance—10 kilograms and 60 kilograms, G.A. Shin—10 kilograms, the Sudoimport export-import company—100 kilograms... Buyers appearing included Ye.Ye. Kalinin, director of a Moscow joint-venture enterprise set up on the basis of the former USSR Ministry of Power Machine-Building. Ye.Ye. Kalinin is looking for mercury suppliers for subsequent sale to a French company..."

There is more. Now we are on the "thin ice" of the frenetic activity of the Promekologiya Concern, which has the blessings of the president of the Russian Federation and is about to begin trading in red mercury. The results of that are subject for a special discussion. Russian Federation presidential directive No. 188-rps would apparently seem to sum it up, very succinctly, like a pistol shot:

"To deem that directive of the president of the Russian Federation No. 75-rps dated 21 February 1992 'On the Promekologiya Concern' is no longer in force.

"This directive enters into force from the moment of its publication.

[Signed] "B. Yeltsin, president of the Russian Federation, 20 March 1993."

But is it too soon to sum up the results? Of course, it might be suggested that finally Boris Nikolayevich has come to himself, away from the tempting but ruinous delusion. He has disowned Burbulis. Good people have dissuaded him, but not all the Rasputins have been removed from around the throne! Logical? Quite logical.

But surely it is no less logical to suggest the following: The president rescinded directive No. 75-rps only formally, out of considerations of even greater secrecy. For the leaks about its content and the activity of Promekologiya and our article constitute graphic confirmation of this. And Sadykov's project will come in its turn.

In English the word is "mercury." That is, the name of a liquid and extraordinarily mobile metal got itsname from the god with the "winged sandals." Mercury (or Hermes, as the ancient Greeks called him) was the patron of messengers, travelers, traders, and rogues. The cunning Mercury, who carried out so many frauds and political intrigues on Olympus and its surroundings, would probably have been pleased with the resourcefulness of the heroes of this article. It is probably only the referendum that he would advise not to hold. For only so much can be set before people's eyes. Although, with a certain sleight of hand, it is also possible to organize "the voice of the people." Using the method of the Vasilyevskiy Spusk and others well known in the time of the biblical pharisees.

Instead of a Final Paragraph

The documents presented in this article are for the judgment of the reader and speak for themselves. We shall therefore limit ourselves to a very short resume: For the sake of its own political survival the regime now in power in Russia is moving to direct betrayal of the country's national interests and placing the security of our state in jeopardy. Without relying too much on the millions of dollars that everyone is promising but no one in the West is in any hurry to deliver, Yeltsin, under the influence of an unprincipled and self-seeking entourage—the real "collective Rasputin"—is prepared to commit yet another secret and large-scale crime.

We suggest that now even those people who at one time sympathized with Yeltsin, who overlooked his promise to "lie on the rails" rather than permit price increases, the impoverishment of broad strata of the popular masses, and other deceitful promises, under the "smokescreen" of which the country has been vulgarly, terribly, and mercilessly pillaged, disparaged, and trampled in bloody interethnic and social dissension and torn to pieces, are having their eyes opened.

In any civilized state, after the publication of these kinds of disclosures both the president and the entire top leadership, who no longer have any moral right to any kind of referendum, would resign. Any further investigation of them, and giving each one his just criminal deserts, would be a matter for special investigative commissions of the parliament, the Constitutional Court, and the Procuracy. If you have a shred of conscience, resign, Boris Nikolayevich...

Foreign Intelligence Service Report

MK2104121493 Moscow NEZAVISIMAYA GAZETA in Russian 21 Apr 93 p 2

[Russian Foreign Intelligence Service report under the rubric "Scandal": "Red Mercury Does Not Exist. Other Valuable Strategic Materials Are Exported Under Its Guise"]

[Text] The press bureau of the Russian Foreign Intelligence Service notes the following in connection with the article "Yeltsingate" published in PRAVDA on 17 April:

1. The Russian Foreign Intelligence Service has and had nothing to do with transactions involving "red mercury" or with authorizing documents permitting these transactions. Hints by the article's authors at some members of

the Foreign Intelligence Service being "privy" to such transactions have no basis in fact.

2. The Foreign Intelligence Service is known to operate outside Russia's borders. The material on "red mercury" sent to the Russian Federation state secretary on 24 March 1992 is based on data from foreign sources. At the same time, the memo stressed the following (the authors of the articles are silent on this): "...all the cited data were procured by means of intelligence operations. The section on data related to Russian practices should be immediately verified again by the corresponding law enforcement agencies."

This checking was carried out at the initiative of the Russian Federation Ministry of Security and the Russian Federation Foreign Intelligence Service. In the course of the investigation into "red mercury," working contacts were established with the Russian Academy of Sciences and a number of research institutes. Law enforcement agencies in some foreign states were contacted on this matter. The official and operational checks established that compounds with the specified chemical formulas and characteristics do not exist. This was documented by heads of the Russian Federation Ministry of Atomic Energy, the Russian Academy of Sciences, and others. The nonexistence of so-called "red mercury" was confirmed by documents from Western special services and the U.S. Department of Energy. Under these circumstances, it was concluded that large-scale international financial machinations are being carried out in order to launder "dirty money" under the guise of "red mercury" transactions, as well as exports under the guise of "red mercury" of valuable strategic materials (platinum, gold, osmium, indium, uranium, plutonium, and so forth.)

The Foreign Intelligence Service informed the leadership, the government of the Russian Federation, of its conclusions regarding the possibility of criminal transactions involving the so-called "red mercury," and presented them in an open report.

Thus, as long as the problem of so-called "red mercury" has been in evidence, the Foreign Intelligence Service has been signaling that no transactions involving it can be allowed, that such transactions could be used by criminal elements—something that the authors of the article do not, unfortunately, notice.

3. The publication of classified documents in the press is not permissible in any state. This directly contradicts the policy aimed at strengthening Russia's state system. The Foreign Intelligence Service has sent a request to the Russian Federation Ministry of Security to investigate the way a classified document fell into the hands of the authors of the article.

Prosecutor Targets Defense Minister

LD2204151593 Moscow ITAR-TASS in English 1405 GMT 22 Apr 93

[Article by ITAR-TASS correspondent]

[Text] Moscow April 22 TASS—The office of the Russian prosecutor general said on Thursday it is going to question Gennadiy Burbulis, former state secretary of the Russian president, on the so-called "red mercury" case as criminal proceedings have been instituted on the basis of documents received from the anti-corruption commission headed by Vice-President Aleksandr Rutskoy.

Other officials of the presidential staff and the government who participated in the "red mercury" deals will be also questioned, the office said in a statement.

Defence Minister Pavel Grachev may also get a summons. The prosecutor's office said it exposed new facts of embezzlement of the property of Russian troops in Germany by high-ranking officers, the Defence Ministry and personally by Defence Minister Pavel Grachev.

Official Assails Rutskoy

LD2504165093 Moscow Ostankino Television First Channel Network in Russian 1320 GMT 22 Apr 93

[Talk by O. Sadykov, president of the Yekaterinburg company "Promekologiya"]

[Text] I should like to comment on what has recently become a very hot political issue, following the sensational statement by Vice President Rutskoy in the Supreme Soviet of the Russian Federation on 16 April. I refer to the problem of red mercury [holds up bottle and shakes it].

The facts are that I encountered the problem of red mercury in the course of my professional work, and after certain negotiations with the government structures and the president, I proposed, more than a year ago, a scenario making it possible, if red mercury existed and was indeed in great demand on the international market, to organize legal production of this commodity and its export, under the control of our special services and our customs services, in the interests of Russia and of the reforms that are being implemented in our country.

Since the vice president claims in his statement that on 22 October 1991, by presidential instruction No. 1167, he was drawn into the discussion of this problem, and that the presidential instruction on red mercury was issued contrary to the opinion of the organization with which he had entered into correspondence on this matter, I must first refute that false information from the vice president. In fact, on presidential instruction No. 1167, which I have in my possession—I drew it up myself and it was after consultation with me that Boris Nikolayevich passed that document to the vice president for implementation. Indeed, it was originally my idea that the vice president should be allowed to work with the document, in accordance with No. 1167. But the first problem, the snag, as they say, is that all the correspondence on this had to be completed by 15 November, so that there is no direct connection between the instruction of 11 February 1992 and the correspondence which was

completed by 15 November 1991. The main point is that in all this welter of documents which Aleksandr Vladimirovich has received directly from me—it was through me that it was passed to him—there is not a single word about red mercury. There is nothing at all about the matter he claimed to have been privy to since 22 October.

I have to say bluntly that that correspondence and that activity of Aleksandr Vladimirovich—which nonetheless ended in the failure of the task the president had entrusted to him—had nothing to do with red mercury. In other words he is, for some reason, linking this issue with the problem of red mercury.

Nevertheless, the problem of red mercury exists. Well, in particular, it is being claimed that red mercury is a very valuable strategic raw material—if it exists. Well, this is a false assertion. The material in question does not figure in any lists of raw materials of strategic importance, and never has. It is alleged that the president gave as a monopoly of production and sale of this material. That is also untrue. There is no mention, in any document issued by the president, of Promekologiya having a monopoly; and indeed we never sought such a monopoly. In order, apparently, to strengthen his story that some dark structure is engaged in highly important activities, the vice president claims that we have a total staff of only 10 or 15 and basic assets of 30,000 rubles; and that I have been stripped of the right to sign financial documents. I must tell you that at our central office alone we have more than 100 people working for us, including about 30 people in our security service. Our basic assets, at the moment of the foundation of the company, were more than 1 million rubles, thus more than 30,000. Finally, no one has ever deprived me of the right to sign financial documents.

What I can confirm is that, yes, our organization acted in the closest collaboration with the services of the Security Ministry, with the Committee for the Protection of Russia's Economic Interests, in collaboration with the president's administration and with the coordinating activity, originally, in this matter, of the secretary of state, who worked on it on the instructions of the president, Gennadiy Eduardovich Burbulis, who at the same time was also first vice president, and we succeeded in organizing the production of three modifications of the product, given by us the trademark and appellation "red mercury," and concluding the appropriate contracts with foreign companies. Every contract and all negotiations were immediately notified by us to Russia's Security Ministry; and in general, it was from us, our documentation, copies of our documents were passed to the special services and procuracy of Russia. Aleksandr Vladimirovich also received them.

In other words, to say there was some independent inquiry which brought to light many criminal circumstances of some sort, without citing the fact that by far the greater part of the factual material which was later published in PRAVDA, for example, on 17 April, was directly received from us, in the framework of cooperation with us, and, in general, thanks to our own activities—this is already a violation of elementary ethics. Well, the main thing is the results which we consider very positive for Russia—results obtained only thanks to the fact that the president had the courage to draw attention to a problem that had existed for many years and was terribly confused, with a final result that was very far from being unambiguous. That he had the courage nevertheless to solve that problem in the framework of accessible and norm forms of commerical activity—that, I consider, is precisely a confirmation of his responsible attitude as a politician to the long-term interests of our country.

However, as a result of that destructive activity by the vice president and by the relevant structures which interacted with him, there was an open disclosure of secret—absolutely secret—information, which now greatly restricts the possibility of taking effective measures to expose the Mafia groups which formerly engaged in large-scale smuggling of this product. Our opportunities for normal economic activity are being undermined, and the damage that we now predict in connection with the vice president's statement amounts for Russia to billions of dollars of lost profit. Our country has suffered damage to the tune of many millions. That damage will evidently have to be answered for under the law, as will the disclosure of secret information, including military information.

Official 'Admits' Existence

PM2604130393 Moscow KOMSOMOLSKAYA PRAVDA in Russian 24 Apr 93 p 2

[Ye. Anisimov report: "Unit of Measurement of Scandals: Billions of Mercury Column"]

[Text] It seems that the vice president will follow journalists in being accused of divulging a state secret: For the first time an official has admitted aloud the very fact of the existence of so-called "red mercury"—a substance to which rumor ascribes unique properties: very high stability of crystal lattice and purity. It is maintained that red mercury can be used in the creation of high-precision weapons. Security organs and Russian scientists have hitherto denied totally the existence of this substance. The Russian General Prosecutor's Office has begun studying materials supplied by A. Rutskoy concerning financial violations in deals with red mercury.

The firm of "Promekologiya" (O. Sadykov, president of the concern), which is accused by the vice president, has made a counter move. Yesterday it sent the editorial office a statement revealing the essence of the matter. It follows from the statement that the "Promekologiya" Concern developed three modifications of red mercury, and the results of the work were constantly reported to the president's administration, the Russian Ministry of Security, the Committee for the Protection of Russia's Economic Interests, and the Russian Prosecutor's Office.

The vice president also received official reports. On 17 March 1993 the concern signed a contract to supply West Europe with 84 tonnes (!) of red mercury over three years. The contract was worth $24.2 billion. The conclusion of a contract with the United States to supply $15 billion worth of this product annually also became a reality. All the interested parties knew of this, including the vice president.

"Promekologiya" believes that by his statement Rutskoy is drawing the concern into political passions, preventing the legalization of its activity, and objectively contributing to the smuggling of red mercury. The concern intends to institute a number of criminal cases in respect to defamation and the dissemination of information that constitutes a commercial secret. The concern also hopes that the competent organs will correctly weigh the harm done by divulging the information and will estimate these actions at their true worth.

Thus, as a result of political battles, a long-concealed secret has come to light: Red mercury exists and is worth a lot of money in hard currency. As for the actual fact of divulgence, all this is too reminiscent of the affair of the exposure of ANT. Once again economic interests have clashed with political interests.

Criminal Proceedings Begin

LD2904135793 Moscow Mayak Radio Network in Russian 1330 GMT 29 Apr 93

[Text] The Russian procurator general has begun criminal proceeedings in the case of one of the documents concerning corruption recently presented to the Supreme Soviet by Vice President Aleksandr Rutskoy. The case has been code-named Red Mercury, and the procurator general's investigators are in charge of it. Deputy Procurator General Yevgeniy Lisov told a news conference that more documents presented by Rutskoy are being studied.

Interpol Russia Bureau Chief Interviewed

MK0304132093 Moscow FEDERATSIYA in Russian No 37, 2 Apr 93 p 3

[Militia Lieutenant General V.P. Ignatov, chief of Interpol's Russia bureau, answers questions by FEDERATSIYA editorial office, reported by Veniamin Polubinskiy "Only for FEDERATSIYA": "Radioactive Business—Myths and Reality"]

[Text] Lately the mass media have often been reporting on attempts to take various radioactive materials out of Russia and about criminal groups cashing in on the sale of Russian strategic raw materials abroad.

To what extent does this information correspond to reality? How extensive is the "radioactive exporting business" and does the underground trade in these materials not pose a real threat that homemade nuclear weapons will eventually crop up somewhere? These were the questions the editors put to Militia Lieutenant General V.P. Ignatov, chief of Interpol's Russian National Central Bureau.

In Pursuit of Sensation

I need to say frankly that many news media reports about attempts to take radioactive materials out of the country contain inaccuracies, and the facts published are not always verified and checked by editorial offices. Some reports are obviously designed to "tickle" the readers' nerves.

Not so long ago "Ostankino," in a bid for sensationalism, revealed to its TV viewers that law-enforcement agencies in Omsk had thwarted an attempt to steal so-called "red mercury" allegedly used in nuclear technologies. It even showed test tubes and vessels with this substance confiscated from the criminals, and it was shouted from the rooftops that we shall soon learn the secret of the radioactive "specter" that foreign special services have so many years been hunting so unsuccessfully and which is now being hunted too by underground nuclear business operators. The promised continuation of that TV feature, however, never came.

Almost at the same time NEZAVISIMAYA GAZETA reported on the courageous adventures of a reporter from a Prague newspaper, M. Mrnk [as transliterated], who managed to get hold of a whole test tube full of "red mercury." According to the successful journalist, it "is produced in the famous Krasnoyarsk-25, which manufactures classical-type nuclear bombs."

This story is fiction, pure and simple, from beginning to end. Moreover there is no such city on Krasnoyarsk soil, and no nuclear bombs are produced there. The main thing, however, is that it has been incontestably proved that "red mercury" does not exist in nature. And if from time to time people come forward claiming that they possess a substance of this name, invariably it transpires that they have fallen victim to smart confidence tricksters. The latter simply foist on the unsuspecting buyers ordinary mercury slightly colored by additives or its simple compounds.

It could be argued that there is no smoke without fire and if the concept "red mercury" has existed for nearly half a century, there must be something real behind it. Everything will fall into place once we turn to history. As is known, the nuclear industry in the USSR was created in the mid-forties. Naturally, from the start not only information about production, but all nuclear materials were strictly classified. It was precisely for that reason that an idea was born to designate them by the code name of "red mercury." Especially since that term was already being used by foreign nuclear scientists. And this is the entire explanation of the fact that neither special services nor journalists have thus far been able to find this mysterious substance.

And Yet Journalists Are Right

They are right in that the criminals are not abandoning attempts to steal radioactive materials and take them out of Russia to foreign countries. They are correct in their concern over the possible serious consequences of such criminal acts.

The fact remains: People seeking easy gain are hunting not only for the radioactive "specter," but also the quite corporeal cesium, plutonium, and uranium. Not so long ago the prosecutor's office of the Udmurtia Republic started criminal proceedings and opened an investigation into a case of the stealing, illegal storage, and transfer of uranium. Over several months 100 kg of uranium was stolen from the Chepetsk mechanical works located in the city of Glazov. Having established requisite ties with their nearby foreign counterparts and with more distant foreign countries, the criminals tried to forward the stolen strategic raw materials there. Luckily, their transactions were thwarted in good time by law enforcement agencies. One of the traders was detained in Brest when attempting to sell several kilograms of the metal to a Polish citizen. Another "entrepreneur" was arrested at the Belorusskiy railway terminal in Moscow in the middle of a deal with a Lithuanian citizen. Eight factory workers and several city residents were implicated in the illegal operations with the stolen uranium. During the search of the detainees over 60 kg of uranium was discovered, and also thousands of dollars and large sums of money.

Apart from this incident, another two attempts to steal radioactive materials were stopped in 1992. Criminals attempted to steal 1.5 kg of uranium from a Moscow Oblast enterprise, and eight kg at a plant in Nizhniy Novgorod Oblast.

I can state with full responsibility that not a single criminal attempt to steal weapons-grade nuclear materials has been registered at any Russian military industrial installation. All instances of the illegal use of radioactive substances uncovered by our law enforcement agencies were related to those that cannot be used to fabricate weapons without special technologies and equipment. In an overwhelming majority of cases the subject of the illegal use was ionizing radiation materials (strontium, cesium, and cobalt).

It should be stressed that one of the driving motives for such criminal operations is the impression, artificially created by some mass media outlets, that there is allegedly a huge demand for the above materials in foreign countries, that their prices are high, and that it is easy to export them from Russia. Our bureau, at its own initiative, repeatedly asked corresponding foreign countries whether such statements tally with reality. Virtually none of them has confirmed that these rumors are correct.

For our part, we are seeking to thoroughly consolidate contacts with our foreign colleagues on questions of preventing and solving crimes related to radioactive materials. In the past year alone we have received from abroad 21 reports on such cases. On each of them requisite checks were made and their results were duly reported to the initiators of the inquiries.

The West Is Also Concerned

Problems of illegal circulation of radioactive substances have been causing growing concern recently in the international community. It is no accident that Interpol is giving such serious attention to questions of preventing and fighting these crimes. In January 1993 the first European working meeting on the illegal circulation of such materials was held in its General Secretariat (Lyons, France). Taking part in it were delegations from 23 European countries, including one from the Russian Internal Affairs Ministry, and also representatives of the United States and Canada as observers.

It was stressed at the forum that the above offenses should be looked at in the overall context of ecological crimes. The situation in this field in some European countries was analyzed. It was noted that along with normal trade exchanges and use of radioactive substances in science and various technologies, in a number of Western countries there is a "black market" in them, while illegal circulation is increasing. Thus, whereas in 1991 in Germany only one illegal transaction involving such materials was registered, in 1992 there were 15 such deals. Along with this, several hundred cases of fraudulent operations were registered involving enriched nuclear materials. What is usually offered for sale is metallic uranium or sources of ionizing radiation. In Belgium in the past three years, 21 instances of unauthorized circulation of allegedly radioactive substances were registered. Subsequent investigation, however, revealed that all these transactions were of a purely fraudulent nature.

Participants in the meeting also familiarized themselves with Austrian legislation providing for liability for negligent (careless) handling of radioactive materials and also for polluting the environment with them. Crimes related to them are now in the charge of a special Internal Affairs Ministry task force created as part of the Anti-terrorism Directorate.

Our delegation reported on measures undertaken at the state level to ensure nuclear and radiation security in Russia and also on concrete examples of international cooperation in this field. We raised the question of the need to work out an international legal act (possibly a Convention) to combat nuclear terrorism that would provide a legal foundation for closer collaboration of the states interested in preventing it.

The European meeting in Lyons once again confirmed the general concern over this increasingly prominent phenomenon that poses a serious threat to public security.

On a Firm Regulatory Basis

Along with strengthening practical measures taken by law enforcement agencies, Russia is revising its normative basis defining not only nuclear, radiation, and technological security standards, but also requirements for ensuring dependable protection of nuclear materials and installations. In particular the Supreme Soviet is currently considering a draft law of the Russian Federation "On the Use of Nuclear Energy."

Nonetheless, even now there are sufficient legal means to fight the above crimes. I would like to remind you that in line with Russia's commitments arising from the international Convention "On Physical Protection of Nuclear Material," back in 1988 the RSFSR Supreme Soviet Presidium passed an edict whereby the following new statutory crime provisions were included in our Penal Code:

—illegal acquisition, storage, use, transfer or destruction of radioactive materials (Articles 223/2, under part I—imprisonment for a term of up to five years, under part II—up to 10 years);

—theft of radioactive materials (Article 223/3—imprisonment for terms between three and 10 years with or without confiscation of property);

—threatening to commit the theft of radioactive materials or to use them (Article 223/4, under part I—imprisonment for a term of up to three years, under part II—up to five years);

—violation of the rules of storage, use, accounting, and conveyance of radioactive materials and of other rules of their handling (Article 223/5, under part I—imprisonment for a term of up to three years, under part II—up to 10 years).

Without in the least belittling the danger inherent in the illegal radioactive business, at the same time the situation should not be overdramatized. The talk about the so-called threat originating from Russia's territory has no foundation in reality. Its law enforcement agencies have sufficient possibilities to more or less safely close off the channels for the uncontrolled disappearance of radioactive materials abroad.

Law on Weapons Proliferation Expanded

LD2904122693 Moscow Mayak Radio Network in Russian 1030 GMT 29 Apr 93

[Text] The Supreme Soviet today adopted a law on introducing additions to the Russian Federation criminal and criminal procedure codes concerning the nonproliferation of mass-destruction weapons. Commenting on the changes in the draft law that were presented by the president, Aslanbek Aslakhanov, chairman of the parliamentary committee on issues of law and order and combatting crime, stressed that the amendments being introduced are, I quote, directed toward protecting the interests of the Russian state in carrying out external economic activities with respect to the export of raw and other materials, equipment and technologies, and scientific and technological information that could be used in making weapons and military equipment, unquote. The illegal export of these products now becomes a criminal liability.

Failure of Nonproliferation Structures Examined

PM2704115393 Moscow ROSSIYSKAYA GAZETA in Russian 27 Apr 93 First Edition p 7

["Viewpoint" by Vladimir Yakimets of the Russian Academy of Sciences System Analysis Institute: "What Three 'Nuclear' Information Explosions Revealed"]

[Text] The world has had a respite from nuclear explosions since September 1992. But the Russian and U.S. moratoriums on nuclear testing expire 1 July. France has officially halted testing. And Britain has been forced to refrain from testing since it uses the U.S. test range in Nevada. From China we have heard neither the sound of explosions nor talk of moratoriums...

How has this breathing space been used to resolve the problems that arose throughout the long years of the nuclear arms race?

The United States and Russia have agreed to cut their superarsenals by two-thirds by signing the Treaty on Further Strategic Arms Reductions (START II). But the preconditions for this treaty were laid down long before the moratoriums. So it is not the nuclear respite that we have to thank for the treaty. Ineed, the main events have occurred in the first three months of this year—three "nuclear" news bombshells exploded one after the other.

The first comprised two reports published a month apart by the Russian Foreign Intelligence Service [FIS] and the Stockholm International Peace Research Institute [SIPRI]

The second "explosion" reverberated around various capitals and international organizations when North Korea announced that it was pulling out of the Nuclear Nonproliferation Treaty.

The third and last came from South Africa [RSA]. The announcement came from the RSA that the country had in fact been a nuclear power for 15 years.

Each of these bombshells not only revealed important strategic information, but also provided food for thought.

The Russian FIS report entitled "The New Challenge Following the 'Cold War': The Proliferation of Mass-Destruction Weapons" and the Swedes' 246-page tome said the same thing—that there are not five but more like 10 countries in the world that possess nuclear warheads. Yet, strangely enough, the international organizations responsible for nuclear weapons nonproliferation failed to react at all to this sensation. International Atomic Energy Agency [IAEA] inspectors were as silent as the

grave. This came after the world public had already been informed about secret arsenals in Israel, India, Pakistan, and North Korea. (Needless to say, various publications had previously published lists of so-called "threshold countries" which were indeed close to the point of producing nuclear weapons, but the existence of these weapons had not been stated so definitely before).

The Russian report calls Israel, an IAEA member, "a country that unofficially possesses nuclear weapons coupled with missile delivery vehicles" and is successfully evading subscription to the treaty governing nonproliferation of these kinds of weapons. Its two installations used to produce weapons-grade nuclear material are not covered by IAEA guarantees. Tel Aviv could have used its scientific and technical base "potentially to produce around 20 nuclear warheads in the seventies and eighties and 100-200 warheads by now." It also says that India—another IAEA member state that has not subscribed to the Nonproliferation Treaty—"can be numbered among those countries that unofficially possess nuclear weapons." India tested its only nuclear device in 1974 and is quite able to produce weapons-grade plutonium.

Pakistan, another country that has failed to subscribe to the Nonproliferation Treaty, "possesses military nuclear potential" and "according to various assessments possesses between four and seven nuclear devices manufactured using highly enriched uranium."

As to North Korea, which signed the 12 December 1985 treaty and an agreement to place its nuclear activity under IAEA supervision, the report states: "At present the DPRK does not have nuclear weapons," but "available information about a 'breakthrough' in DPRK development of its own nuclear weapons is causing serious doubts."

SIPRI thinks otherwise: According to its information, Pyongyang is capable of creating between four and seven nuclear devices by 1995. This determined its decision to pull out of the Nonproliferation Treaty.

While giving fundamentally similar assessments of the state of India's and Pakistan's military nuclear doctrines, the Swedish report confirms the existence of far-advanced Israeli civil and military nuclear programs. And it concludes that these four countries have the potential to produce 121 nuclear charges.

A lot of things have fallen into place since these two reports were published. It has been reaffirmed that the extreme secrecy surrounding military programs involving mass-destruction weapons causes them to develop unchecked and poses a tremendous threat to everyone.

In the bipolar world of the last 40 years the dominant political note has drowned out common sense. The nuclear powers declared their love for disarmament while flexing their nuclear muscles to exaggerated proportions. Even Mikhail Kolesnikov, chief of the Russian Armed Forces General Staff, could not hide the fact during the parliamentary hearings: "When I took on my job, got down to work, and began to investigate the holy of holies—how much we have of what—I gasped: How we lost sight of common sense in the past."

The superpowers did not only employ double standards toward their own actions. Double standards were also "at work" with regard to the satellite countries and states that shared their political doctrine. The United States did not impede and sometimes even helped the development of Pakistan's and Israel's military nuclear programs, while the USSR demonstrated the same loyalty toward North Korea, China, and India. The results of a policy resting on double standards created an ineffectual network of international organizations, unable to stop the spread of nuclear weapons across the globe.

Parliamentary hearings were held 6 March at the Ukrainian Supreme Soviet to discuss questions pertaining to the new country's nuclear status. Many people described the nonproliferation treaty as discriminatory and in violation of Ukrainian national interests. Yet Ukraine does de facto have nuclear potential comparable to that of France. This can be regarded in different ways, but Russia should not view what is happening from the vantage point of its status as a nuclear power—a status that it has acquired by right of succession from the former Union. This status can be revoked when it comes to the fate of the nonproliferation treaty.

RSA President Frederik de Klerk officially confirmed 25 March something to which press releases from a number of antinuclear organizations had been drawing attention: For over 15 years—1974 through 1989—the RSA secretly had six nuclear devices. This report caused a mega-sensation. Because it means that the nuclear disarmament process actually began, without fine-sounding statements or lengthy coordination, in 1989 when F. de Klerk came to power and decided to destroy all the weapons. It is therefore strange to read in the Russian FIS report that "the RSA does not possess nuclear weapons," although it "possesses the practical potential to build an explosive device."

The South African president's admission clearly showed that the system of international organizations monitoring nuclear weapons nonproliferation has so far failed to escape the influence of the political dogmas of the seventies and eighties. The upshot is that the disarmament process began and is continuing without its participation.

This effectively means that a whole series of bureaucratic structures like the IAEA have failed in their missions, and it casts doubt on their ability to review their functions and duties so as not to fall behind the times. They can thus hardly be expected to provide constructive answers as to what changes should be made to the structure of the international nuclear establishment, who should draw up new treaty commitments on mass-destruction weapons, and how these aims should be achieved.

Conversion of Rockets to Satellite Vehicles Report

LD2604172293

[Editorial Report] Moscow Radio Rossii Network in Russian at 1400 GMT on 24 April carries a three-minute report on a conversion project that has resulted in the launch of a START I carrier rocket.

The announcer notes that the project was spearheaded by the (IVK) joint-stock company and the Kompleks scientific and technological center after specialists suggested that some of the intercontinental ballistic missiles which are to be destroyed under the terms of the Russian-U.S. START I Treaty could be used to launch small spacecraft.

Kompleks Director (Yuriy Solomonov) notes in a recorded interview that this is an example of practical conversion in which ways were found to use the scientific and production potential of his enterprise and enterprises working in related spheres to begin and successfully complete the work. He says that it was not a simple conversion of technologies which until recently had been used and are still used for defense, but a search for a way which would enable the complex to be used for the benefit of those directly involved and those providing services, to carry out launches not only in Russia but abroad as well.

The announcer points out that this is the first time that an experimental satellite weighing 250 kg had been launched by a solid-propellant ballistic missile, known abroad as the SS-25. It was necessary to design an additional stage to accomplish the goal. The START I rocket-space complex can place satellites of twice the weight—up to 550 kg—into orbit. (Solomonov) also noted that the work was not financed from the budget but by Russian investors.

Commission Seeks Arms Export System Realignment

MK2404124693 Moscow KOMMERSANT-DAILY in Russian 24 Apr 93 p 11

[Roman Glebov report: "Arms Trade Reform To Follow Ministry of External Economic Relations Plan"]

[Text] The Interdepartmental Commission on Military/Technical Cooperation [ICMTC] has established guidelines for reforming the arms trade system. The minutes of the commission's session signed by chairman Georgiy Khizha were sent to its members yesterday.

Founded a year ago in accordance with Boris Yeltsin's edict, the ICMTC coordinates the activities of organizations involved in the arms trade. The main ones among them are Roskomoboronprom [Russian State Defense Industrial Committee], which represents the interests of arms manufacturers; the Defense Ministry, which defines the strategy of military-technical cooperation; and the Ministry of Foreign Economic Relations [MFER], which carries out export operations.

"Each side is seeking to derive its own benefit from military-technical cooperation," Nikolay Petrakov, the commission's executive secretary, said, commenting on the present condition of the arms trade system. Each department has proposed its own version of the reform.

Yevgeniy Yanpolskiy, Rosoboronprom deputy chairman, believes that the export system should above all take the interests of arms producers into account. Thus far the sole revenue these enterprises receive from export operations is 12 percent of the hard-currency incomes that they earn in tandem with the MFER's foreign trade firms—the Main Administration for Collaboration and Cooperation [MACC], Oboroneksport, and Spetsvneshtekhnika. The producers are not happy with the activity of these firms: 20 billion rubles worth of weapons ordered by the MFER in 1992 have not been sold yet and are still being held at the enterprises. In connection with this, Rosoboronprom suggested that an export system, parallel to the MFER's, be set up within whose framework the producers themselves could sell weapons manufactured in excess of state orders, distribute profits, pay for the services of intermediaries, and set prices.

Aleksey Shulunov, president of the League of Defense Enterprises, which protects the interests of the defense industry, believes: "Today spare parts for our military equipment are being produced in Israel and France. The enterprises must be allowed to export spare parts bypassing the MFER's sluggish export system."

Russian Defense Minister Pavel Grachev would like to strengthen the Defense Ministry's role as a monitor of military-technical cooperation. He suggests that the Defense Ministry receive no less than 10 percent of hard-currency revenues from any export arms deliveries and that it export surplus equipment in the ministry's possession.

Prior to the commission meeting Sergey Glazyev, head of the MFER, dismissed Valeriy Mironov as chief of the MFER's department for military and technical cooperation (this position is now occupied by Aleksandr Kotelkin) and his deputy Vladimir Shibayev. In addition, he announced the intention to "cede MACC to the League of Defense Enterprises." According to Glazyev, the MACC is to cease its independent existence and merge with the joint-stock company Konvimeks, whose startup capital will be distributed as follows: 51 percent will belong to the state (as represented by MACC) and 49 percent to the League of Defense Enterprises. At the same time Konvimeks will receive a license to export arms and military equipment.

Glazyev also proposed that an arms producers' monitoring council be set up under the MFER's specialized foreign trade agencies, and if the producers are not satisfied, then joint-stock companies should be set up with the participation of MFER's enterprises and foreign trade agencies.

The commission has accepted the MFER's proposals as a basis for further work.

It is noteworthy that the commission's other decisions refer to the future. It has instructed relevant departments to come up within two months with the following proposals: on granting arms exporters exemptions from customs duties; on provision of soft credits to enterprises for manufacturing weapons in excess of state orders; and on drawing up a list of enterprises producing spare parts that will get licenses to export their products without special permission from the government. At the same time competition in the foreign market will become impossible—the commission has instructed the Ministry of Security to come up with proposals on liability for unauthorized operations in the foreign market.

[Box, p 11]

The Existing System of Military/Technical Cooperation

—The series of endorsements required to obtain permission to export arms: the president, the government, the ICMTC, the Ministry of Foreign Affairs, the Ministry of the Economy, the MFER, the Defense Ministry, and the Foreign Intelligence Service.

—Arms export operations are conducted by MFER's foreign trade firms: Oboroneksport, Spetsvneshtekhnika, and MACC.

—The procedure of obtaining the endorsements takes from two to 15 months.

ICBM Launchers Discovered at Former Soviet Base

LD2604220093 Warsaw TVP Second Program Network in Polish 1900 GMT 26 Apr 93

[Text] Intercontinental missile launchers, a nuclear weapons store, and two tanks for (?semina), a rocket-fuel, have been discovered by a group of experts from the Military Technical Academy. Containers for the transportation of missiles have also been discovered. Military experts are carefully examining the terrain left behind by the former Soviet Army. Its recultivation will take tens of years and will cost almost 18 trillion zloties.

[Correspondent Katarzyna Andrysiak] The two tanks with (?semina), a rocket-fuel, were discovered at the base in Borne-Sulimowo. There are also around 2,000 containers for fuel and oils in this extensive terrain. Their capacity is between 30,000 and 50,000 liters each. In another part of the forest a store for nuclear weapons has been discovered together with intercontinental missile launchers. At Kluczew the containers used to transport the missiles have also been discovered. [video cuts to show Adam Spychala, head of the Military Technical Academy Coordination Commission, speaking]

[Spychala] At this time one might be tempted to formulate two fundamental conclusions. The first, that on the examined terrain contamination by toxic battlefield materials and also radioactive contamination have not been confirmed. And second, that the most threatening element degrading the environment here is oil-based products.

[Andrysiak] Examination work is made difficult because the so- called clandestine complexes [kompleksy tajne] had no inventories drawn up when they were handed over. The photography of this terrain does not always allow for the type of contamination to be specified. Unexploded shells are frequently discovered, which apart from the enormous ecological damage, constitute a threat to life.

A cemetery has also been discovered in Borne-Sulimowe where soldiers sentenced by wartime courts [sady wojenne] were buried. The wartime courts with heightened discipline had jurisdiction over the Russian units stationed in Poland. [video shows row of fuel tanks in forest, painted green; close-up of Russian markings: "name of product—samin, quantity tonnes—, delivery date—8.88, date last tested - 12.88"; two more tanks in forest, painted silver; armored entry door to concrete bunker; detail of hinges of bunker door; pile of approximately 60 green-painted missile-transport carrier tubes; derelict storage sheds; scattered and broken missile containers; aerial photograph; man checking content of underground storage bunker through inspection vent; hanger with one door slid open; unexploded shell; panning shot of cemetery beginning to fall into neglect]

KAZAKHSTAN

U.S. Delegation Tours Sites; Examines Exports

Delegation on Working Visit

LD2304165193 Moscow ITAR-TASS in English 1516 GMT 23 Apr 93

[Article by KAZTAG correspondent Yelena Poluyanova for TASS]

[Text] Alma-Ata April 23 TASS—The disintegration of the former Soviet Union has created an unprecedented situation—the threat of a global nuclear conflict has disappeared, but a danger of proliferation of mass destruction weapons and nuclear technologies from former Soviet republics occurred, U.S. Undersecretary of State adviser Michael H. Newlin told a news conference at the U.S. Embassy in Kazakhstan today.

Newlin heads a U.S. delegation, currently here on a working visit.

In his opinion, the previous tough control system has disappeared. Both the U.S. and Kazakh sides are interested in the creation of a new control system.

The official stressed the similarity of U.S. and Kazakh conditions, including the availability of uranium and well-developed chemical industry, enables the Kazakh

use of the U.S. experience in the issue. The implementation of a U.S.-proposed program has begun to include the making of lists of materials liable for control, the establishment of procedure of licensing and departments to supervise licensing, the creation of a computer system and training of customs officers.

Although the program implementation will take much time, the huge demand of the international black market for nuclear, chemical and biological arms and ballistic missiles proves its necessity, stressed Newlin.

The delegation, which arrived in Kazakhstan at the invitation of the republican government, has had consultations with representatives of various republican departments to discuss the creation of the best system to control possible exports and imports of nuclear and other dangerous materials.

The Americans visited the Kazakh national nuclear center of Kurchatov to discuss a possibility of nuclear power engineering development in Kazakhstan and future Kazakh admission to the International Atomic Energy Agency (IAEA).

Examines Nuclear Exports

OW2404143293 Moscow INTERFAX in English 1333 GMT 24 Apr 93

[Following item transmitted via KYODO]

[Text] The U.S. delegation headed by the adviser of the State Secretary assistant on arms trade Ambassador Mikhail Newlin focused its attention on the issues related to ensuring guaranteed control over possible export and import of nuclear materials from Kazakhstan.

At a press conference in Almaty Newlin reported that there were no registered cases when Kazakhstan sold nuclear materials abroad. However, he noted that there are several states which "will be looking for a possibility" to procure nuclear materials.

In Newlin's words, the United States are ready to develop a special program for Kazakhstan which would include such provisions as determination of the cost of the control system, compiling lists of prohibited for exports materials, and creation of computer system and a system of frontier control.

KYRGYZSTAN

Strict Control on Weapons Grade Material Exports

LD2204141493 Moscow ITAR-TASS in English 1305 GMT 22 Apr 93

[Article by KYRGYZKABAR correspondent Albert Bogdanov for TASS]

[Text] Bishkek April 22 TASS—Kyrgyzstan has introduced strict control on exports of raw products and materials which are used in making weapons of mass destruction.

The state customs department will keep an eye on exports and imports under which a special commission will begin to operate within a month's time, a Kyrgyzstan Government resolution, published today, stated.

UKRAINE

Chemical Shipment to Libya Halted

93WP0144B Moscow KOMMERSANT-DAILY in Russian 15 Apr 93 p 15

[Report by Department of Operational Information: "Ukraine Halts Delivery of Cargo to Libya. Customs Did Not Give 'OK' To Ship Chemicals"]

[Text] **Yesterday Ukrainian authorities reported that this week the customs service of the port of Ilichevsk detained a shipment of chemical products which could have been used for producing rocket fuel intended to be sent to Libya.**

A representative of the republic's Ministry of Foreign Affairs, Yuriy Sergeyev, announced at a briefing that 80 tonnes of ammonium perchlorate were to have been sent by ferry to Varna and from there to Libya. The batch of goods was dispatched by an unidentified Russian firm.

This product is on the list of elements used in missile technology whose shipment is subject to special monitoring by the state. A representative of the department of disarmament of the Ministry of Foreign Affairs of Ukraine, Vladimir Velashov, reported also that the ammonium perchlorate has civilian applications as well—in agriculture and medicine.

Yuriy Sergeyev stated: "The cargo was detained because of the existing embargo against Libya." Ammonium perchlorate is included on the list of goods banned from delivery to Libya, and its shipment would be a violation of sanctions against this Arab country introduced in 1988 because of its part in the explosion of the Pan Am passenger airplane over the town of Lockerbie (Scotland).

This is not the first case of its kind. At the beginning of this year Western countries and Russia accused Ukraine of violating the sanctions against Serbia because the Ukrainian authorities permitted the delivery of oil there along the Danube.

Environment Minister on Nuclear Disarmament Cost

LD2304201593 Moscow ITAR-TASS World Service in Russian 1918 GMT 23 Apr 93

[By UKRINFORM correspondent Sergey Balykov for TASS]

[Text] Kiev, 23 Apr—Ukraine will require about $3 billion at current prices for full nuclear disarmament. This information was cited today by Environmental Protection Minister Yuriy Kostenko at a news conference on the results of a closed parliamentary sitting which was devoted to the preparation of the treaty on the reduction and limitation of strategic offensive weapons for ratification and to the acquisition of nonnuclear status by Ukraine. Ukraine, he said, is a nuclear power which has so far never violated a single international legal norm. Nevertheless, it is under constant pressure from other countries. In particular, it is under pressure from Russia, which has stated that if Ukraine fails to sign the treaty on nonproliferation of nuclear weapons, it will suspend the delivery of nuclear fuel for a nuclear power station and stop rendering technical assistance. Russia, in the opinion of Yuriy Kostenko, has no rights to warheads, but it is only Russia that can maintain them. Therefore, appropriate agreements were signed with Russian enterprises with regard to the maintenance of nuclear weapons. Yuriy Kostenko denied reports that nuclear weapons in Ukraine are in a dangerous state. All nuclear warheads on Ukrainian territory are within the guaranteed period during which they can be safely kept, he stressed.

FRANCE

Metal Alloy Defects Noted in Nuclear Plants

93WP0136A Paris LE FIGARO in French 13 Apr 93 p 26

[Article by Jerome Strazzulla: "Nuclear Power Plants That Age Prematurely"]

[Text] *A metal alloy is the cause of many cracks.*

Inconel 600, used for 20 years in vessel covers, is the cause of abnormal leaks. The entire French system will have to undergo a painstaking and costly inspection.

Is it a case of the premature aging of French nuclear power plants or an old technological error now being dealt with reluctantly? Inconel 600, one of the metal alloys that was "new" 20 years ago and used mainly on the primary circuit, the atomic reactor, has revealed unforeseeable weaknesses with use. Blamed for several serious technical alarms over the past 10 years, Inconel 600 has now been named as the cause of leaks or potential leaks on the vessel covers of pressurized water reactors.

The discovery renders a complete inspection of all French power plants essential, plus the purchase of 15 new covers (at a cost of 50 million francs each). From the standpoint of safety, nuclear energy comes out fairly well. Luck alone does not explain why the underperforming metal has not caused any major problem. From a financial standpoint, the operation is costly, but not ruinous (2 billion francs over four years since 1991, or 5 percent of the annual maintenance budget). Damage to France's technological reputation must still be assessed. The first alarm signals are not recent nor even fairly recent. By the end of the 1970's, pipes in the power plants' steam generators (hot water-cold water contact) began to exhibit cracks. More recently, in 1989, weld seams on smaller pipes revealed the same weaknesses. What the two abnormalities had in common was Inconel 600, a metal alloy of nickel, iron, and chrome with a high nickel content which in the early 1970's was designated as a nuclear material because of its two principal properties: Inconel 600 was more rust-resistant than its metal cousins and, above all, had the same coefficient of expansion as the "black metal" with which it came into contact, ensuring a tight seal of welds. After all, nuclear power amounts to a pile of pipes whose chief role is specifically not to leak!

While it may have been disturbing to observe that a metal was not aging well, it did not become truly gut-wrenching until the conventional 10-year inspection of Bugey's reactor No. 3. As in all 10-year inspections, this one consisted, after the section had been shut down, of forcing the usual pressures in all pipes. The test first of all makes it possible to ascertain their reliability in case of abnormal operation and second, to test their hardening under normal operation. In Bugey 3's primary circuit, water was circulated at a pressure of 207 rather than the usual 155 bars. It is not certain whether the EDF [French Electric Company] found the leak from the vessel covers surprising. Whatever the case, it could not be ignored.

Like many parts of the power plants, the vessel cover is well-named. It closes the vessel in which uranium is undergoing fission. Heat from the nuclear reaction is carried by water (primary circuit), then exchanged, and transformed into electricity (secondary circuit).

The cover of this cute Minute giant has holes plugged by couplings through which the clusters of control levers used to shut down the fusion reaction pass, which is how everything is kept from running wild. However, a liter of water an hour was leaking from one of the 65 Bugey 3 couplings.

Careful study revealed that it had a dozen cracks. The analysis was completed all the more rapidly because it had been initiated as a result of the problems of the 1970's and then those occurring in 1989. Inconel 600 is sensitive to corrosion under tension. Particularly at weld spots, hot water under high pressure slowly cracks the metal. If not diagnosed, the cracks could lead to a break, which would have forced an emergency shutdown. In case of abnormal operation of the reactor leading to increased pressures in the primary circuit, the sudden failure of a weakened weld would have reduced initial risks.

As soon as the Bugey incident was diagnosed, France's biggest electric company tasted the joys of standardization. Unlike the American power plants, all French facilities are "twins." While this standardization results in large-scale savings, it also presents a drawback: When a design problem occurs anywhere, it is multiplied by the 52 reactors in operation. Inspection of all vessel covers is therefore underway. Nine were completed last year (one at Flamanville, five at Bugey, three at Paluel, and one at Gruvelines; Blayais is undergoing inspection). Half of the plants will be inspected before the end of this year. Of the 1,025 couplings inspected to date, 43 were cracked.

Negotiations

If the real dimensions of the problem did not begin to appear publicly until 1993, the "Inconel worry" goes back further. Months of negotiations resulted in an agreement between the builder (Framatome) and the operator (EDF) in order to determine which of the two would pay the bill. Golfech 1 and 2, Cattenom 3 and 4, and Penly 1 and 2, still under guarantee, will be Framatome's responsibility; the rest that of the EDF. Likewise, Inconel 600 will be dethroned by a more competitive substitute already ready for use, Inconel 690. Similar to the alloy chosen by the Germans, which has a higher chrome content, it has just been used in the new Dampierre steam generator.

The "abnormality" will make up 0.2 percent of the total budget of the EDF, which guarantees that the kilowatt-hour price will remain 30 percent lower than if it were produced by coal. The main problem lies elsewhere: Once its plants are up, the EDF has less time and margin than anticipated to make investments undertaken by the nation following the first oil crisis profitable.

National alerts and international accidents constantly drive up the bar of safety and raise the cost of maintenance. In addition, what is cautiously called "premature hardening" corresponds, in the specific case of the vessel covers, to past technological errors that must now be paid for.

All we need now is for such technological errors in design to speed up the "premature hardening" in the years ahead.

GERMANY

Police Seize Illegal Cache of Nuclear Material

LD2304195693 Hamburg DPA in German 1448 GMT 23 Apr 93

[Text] Koblenz (DPA)—German police have uncovered illegal dealings in nuclear material of Estonian origin. The public prosecutor's office in Koblenz said today that the managing director of a company based in Andernach near Coblenz last year received several consignments of cesium, rubidium, barium, and strontium worth a total of 600,000 German marks [DM]. The man intended to sell the material in Germany and abroad for over DM1 million. He is now in custody. The dealer temporarily stored the nuclear material in Freiburg im Breisgau to test it for purity. It was here that the police seized the material. Police said that at no time was there any threat to the public as the materials involved were intended solely for medical research and optical devices.

DPRK, Iran, Cuba May Form Anti-U.S Alliance

SK2304064893 Seoul CHUNGANG ILBO in Korean 23 Apr 93 p 3

[Text] The Japanese newspaper SANKEI SHIMBUN reported on 23 April from Cairo that North Korea, Cuba, and Iran are now promoting a tripartite alliance against the United States in an effort to strengthen their military and economic ties.

This newspaper reported that progress has been made in forming such an anti-U.S. alliance among these three countries because their national interests coincide on the basis of the barter trade of arms, petroleum, and sugar that each has respectively.

The newspaper said: Iran which has maintained good diplomatic relations with North Korea has been importing from North Korea various types of weapons, including Scud missiles, in return for its exports of petroleum to North Korea. Recently, it is also promoting negotiations with North Korea on importing "Nodong 1" missiles which have a range of 1,000 kilometers. Therefore, there is the possibility that these missiles will be shipped from North Korea within this year at the earliest.

Third-World Nuclear Weapons Programs Surveyed

93WP0140A Moscow NOVOYE VREMYA in Russian No 13, Mar 93 p 20-22

[Article under the rubric "Security Problems" by correspondent Aleksandr Polyukhov: "Asia—A Nuclear Powder Keg"]

[Text] According to the Stockholm International Peace Research Institute (SIPRI) Israel, India, and Pakistan already have "the bomb." The intentions of Iraq, North Korea, Iran, and Algeria are cause for concern. Their example shows that "success" requires titanic efforts. Smuggling equipment and recruiting specialists from abroad is a helpful but not decisive element in a nuclear program. Production of weapons-grade uranium and plutonium—the "explosives" of atomic weapons—remains the most difficult problem.

David's Sling

Israel erected the Dimona nuclear center in the Negev desert, far (by local standards) from cities and foreign eyes. Here in 1963 firms from France built a reactor which began to produce plutonium in Israeli hands. Its capacity (by design 24 megawatts) has been secretly increased almost threefold—up to 70 megawatts. Either the French wrote one thing in their documents, but built another, or the customers displayed inventiveness. In the latter case, as in other nuclear matters, immigrant scientists from the USSR could have played a role.

The reactor yields from 8.8 to 15 kilograms of plutonium, but Dimona has the capacity to process spent fuel, from which up to 40 kilograms of plutonium per year can be extracted using Purex technology. Since they form the metal into spheres weighing 4.5 kilograms each, that, it appears, is exactly how much is required to equip one bomb. Incidentally, in the United States three to four kilograms goes into the making of a modern warhead. The lack of annual data on the true capacity of the reactor does not permit us to say accurately how much plutonium Israel managed to obtain, but SIPRI estimates its total quantity at 240-415 kilograms (as of the beginning of 1992). The country could have from 48 to 83 weapons.

It is difficult to forecast the increase in Israel's atomic arsenal, since information on Dimona's future is highly contradictory. Some sources suppose that the reactor's capacity will increase up to 150 megawatts. Some of the experts, to the contrary, think that it is hard to expect efficient operation from a 30-year-old reactor and that it will have to be shut down due to technical problems or from the political influence of the United States, presenting this as a concession to the Arabs in a Near East settlement. SIPRI is assuming that Dimona's operation will be maintained at the present rate until at least 1996, the plutonium reserves will increase to 275-475 kilograms, and the number of weapons will increase to 55-95.

Grandmother Shadows Grandfather

India is carrying out the most extensive atomic program among the developing countries. The country denies that it has nuclear bombs in its arsenal, but in 1974 it conducted a "peaceful" explosion of a 12-kiloton device (one kiloton is equivalent to a thousand tons of TNT). However all of the component parts for warheads are on hand. "The rapidity of assembly," assures P. Iyengar, chief of the Indian Atomic Energy Agency, "depends on how much time we will have".

The military segment of the nuclear industry includes two reactors: Cirus (40 megawatts), sold in 1960 by Canada, and Dhruva (100 megawatts), built in 1985 by the Indians themselves. Both are located in the atomic research center at Bhabha. The first, which yielded material for the "peaceful" explosion, produces 8.8 to 10 kilograms of weapons-grade plutonium per year, while the second produces 22-26 kilograms.

The Indians have AES's [nuclear electric power stations] in Madras and Narora, which are not inspected by the International Atomic Energy Agency (IAEA). Each of their three reactors could produce, if such a decision were made, up to 100 kilograms of plutonium yearly. Plutonium is recovered from spent fuel at a plant in Trombay and in the PREFRE laboratory. Their annual capacity is as high as 150 kilograms of the metal. According to SIPRI's estimate, by 1992 225-375 kilograms of weapons-grade plutonium has actually been produced; at 5 kilograms per bomb, 45-75 bombs could be produced.

By agreement with Canada, India has the right to use the plutonium from Cirus only for peaceful purposes. If Delhi has fulfilled the agreement, then the military reserves of the metal, and thus the number of weapons, ought to be reduced by a third. There is, to be sure, a loophole: it is technically possible to pass off the plutonium "wastes" from Cirus as non-weapons grade plutonium from civilian AES's. According to forecasts, by 1996 India could have at its disposal 425 kilograms of weapons-grade plutonium, enough for 85 atomic warheads.

India is unique among the developing countries in that it organized the manufacture of high-tech nuclear equipment, including gas centrifuges, needed for uranium enrichment. Right now in the Bhabha center they can obtain up to 2 kilograms of weapons-grade uranium per year, but the startup of the plant in Ratankali will probably increase production to 3 kilograms. This is not enough for even one nuclear weapon, but when the process is debugged, India will be able to quickly increase the number of centrifuges and not resort to the services of other countries.

India's atomic successes aroused jealousy in neighboring Pakistan. In the mid-1970's it secretly obtained in the West the technology and components for uranium enrichment by the gas centrifuge method. Since 1986 the level of enrichment has made it possible to obtain weapons-grade uranium. Although the IAEA monitors the only AES in the country, it does not cover the uranium enrichment plant in Kahuta. Here centrifuges have been assembled using "imports." The chief of the Pakistan atomic program A. Khan, working in the Netherlands, personally swiped their plans.

About 14,000 centrifuges have been installed at Kahuta. These are capable of producing 45-75 kilograms of weapons-grade uranium per year; however SIPRI doubts that the Pakistanis will be able to maintain more than 3,000 machines in working order at one time. A new plant has also been built in Golra, but there is not yet any information on its capacity. The total quantity of weapons-grade uranium obtained by 1992 is estimated to be 130-220 kilograms.

The Pakistanis are presumed to be using the Chinese design for a uranium bomb, which they either received as a gift from the PRC or stole. It requires about 20 kilograms of "explosives" for a weapon, which means Pakistan may have 6-10 bombs. In any case, Islamabad officially acknowledges that it "has the components for assembly of at least one atomic explosive device." By 1996 the Pakistanis will probably have produced 430-520 kilograms of weapons-grade uranium, which is enough for 20-25 weapons.

Not being able to use spent fuel from AES's for military purposes, Pakistan cannot recover plutonium on an appreciable scale, but it does have a laboratory of this type in its PINSTECH [Pakistan Institute of Nuclear Science and Technology] center. The technology was obtained from France. PINSTECH can be substantially expanded, if Islamabad manages to buy equipment in the West and finds a fuel source not under the control of IAEA.

Saddam's Nuclear Sword

SIPRI experts say that four other nations—Iraq, North Korea, Iran, and Algeria—"cause concern." The most well-known is the Iraqi military atomic program, the details of which were discovered by IAEA and UN inspectors after the war in the Persian Gulf. It turned out that Baghdad was really conducting research on enrichment of uranium through four methods: gas diffusion, chemical means, electromagnetic means, and gas centrifuge. The latter two methods yielded encouraging results at facilities in Al-Tuwaitha, Tarmiyah, and Al-Sharqat, but never achieved the level of enrichment needed for weapons production.

If it weren't for the war, the electromagnetic installations could probably have begun production of weapons-grade uranium within 18-36 months at a level below 15 kilograms per year. The gas centrifuges could have begun production within 36-48 months at a level of up to 40 kilograms per year. Thus, theoretically, Iraq could have manufactured two atomic bombs in 1995, but of course such rapid progress is no certainty.

The plutonium program was rudimentary due to the lack of plutonium production capacity—the French had not finished constructing the Osiraq center. In 1979 Israeli agents destroyed its reactor equipment in a French port, and the building itself was destroyed by Israeli aviation in 1981. Iraq has only a modest 5-megawatt reactor obtained from the USSR at the end of the 1960's, but it was under IAEA safeguards.

Kim Il-Song Goes for Broke

North Korea, which is creating plutonium-separation capacity and is working on uranium enrichment technology, has advanced much farther. In Yongbyon the old reactor operates at a capacity of 20-30 megawatts, producing 4-6 kilograms of plutonium per year. This is enough for the manufacture of one atomic device. A 200-300 megawatt reactor is being built nearby which when started (no earlier than 1995) would be able to yield 40-60 kilograms of plutonium per year. In Taechon a 1,000-megawatt reactor is being built which within several years will be able to produce up to 200 kilograms of plutonium, if it does not completely consume the fuel.

In Yongbyon a plant is being built for the recovery of up to 250 kilograms of weapons-grade plutonium per year from spent fuel from all three reactors. The project is 80 percent complete, but only two-fifths of the equipment has been installed. Considering the country's economic problems, it will be difficult for the government to find the hundreds of million of dollars needed to finish equipping the enterprise and complete the construction of the reactors. But under a barracks regime even this is possible.

North Korea has the technology for laboratory preparation of plutonium, which, as with other atomic secrets, was gotten in the sixties from the Soviet Union. By 1992 Pyongyang has stockpiled 5-10 kilograms of weapons-grade plutonium, but with the startup of the new plant the quantity will grow with the processing of stockpiled spent fuel. By 1996 the DPRK could have at its disposal enough plutonium to make four to seven nuclear weapons. If the two reactors under construction are started up on time, then by the year 2000 plutonium stocks will increase manyfold.

On 14 March north Korea declared that it will no longer fulfill its obligations under the nuclear weapons Non-Proliferation Treaty. Pyongyang's decision provoked an increase in tension in the region. South Korea is fully capable of resuming its military nuclear program which was halted in the mid-1970's. Such a step by Seoul would make relevant a reexamination by Japan of its so far negative approach to the possession of atomic weapons.

Pyongyang's step evoked a highly negative reaction in Moscow.

In the final analysis the U.S. could inflict military strikes on North Korea's atomic facilities. A possible moment is the transfer of power from Kim Il-Song to his son or a change of the country's leadership in another form.

Tattletales

The nuclear program in Iran has made significantly less progress. Both small reactors and the rest of the atomic facilities of this member country of the Non-Proliferation Treaty are under IAEA safeguards. Western intelligence services have not revealed the secret centers of which there is much speculation in the mass media. In SIPRI's opinion, even with the most rapid progress Teheran will get weapons-grade plutonium or uranium only by the year 2000, and that only if it immediately starts work on making a nuclear bomb.

The rumors about the military purpose of the as-Salaam reactor which the PRC is building in Algeria are not being confirmed either. However the fact that Algerian authorities agreed to place the facility under IAEA safeguards only after information on the secret construction site in the heart of the Atlas Mountains leaked to the press gives cause for watchfulness. Theoretically the 10-15 megawatt reactor can produce 2 kilograms of plutonium annually, but IAEA states that there is no plant in Algeria to extract plutonium from spent fuel. Rumors of the existance of such a facility in Ain-Oussera were about to appear in the press.

The renunciation of a number of countries of atomic research of a military nature begun earlier, arouses a certain optimism in SIPRI experts. Argentina, Brazil, and South Africa allowed IAEA to inspect their facilities, and Taiwan returned spent reactor fuel to the U.S., thereby removing suspicion concerning its intention to begin recovery of plutonium.

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